SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

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Josephs Appointed Convair Gen. Manager

Lyman C. Josephs has been appointed vice president and general manager of Convair division, reporting to Convair President Jack L. Bowers.

Reporting to Josephs, who formerly served as Convair director of advanced systems, are research and engineering, operations, contracts, material, launch vehicle programs, and new product development departments.

LYMAN JOSEPHS

Bowers, now group executive for the Convair and Electronics divisions of General Dynamics, will continue to have reporting directly to him Convair scientific programs, finance, legal, industrial relations, reliability control, communication, and market analysis and planning functions.

A. G. Daubert, general manager of the Electronics division, also reports to Bowers.

Bowers said the new alignment and division of management responsibility will enable those department heads whose primary functions are staff in nature to assist in a broad way with the two divisions. Those department heads whose primary function is line and who are directly responsible for profit and loss to Convair, report to Josephs.

Grouping of the Convair and Electronics divisions was because of their complementary nature, Bowers said. Both divisions are heavily involved in aerospace and military systems with product

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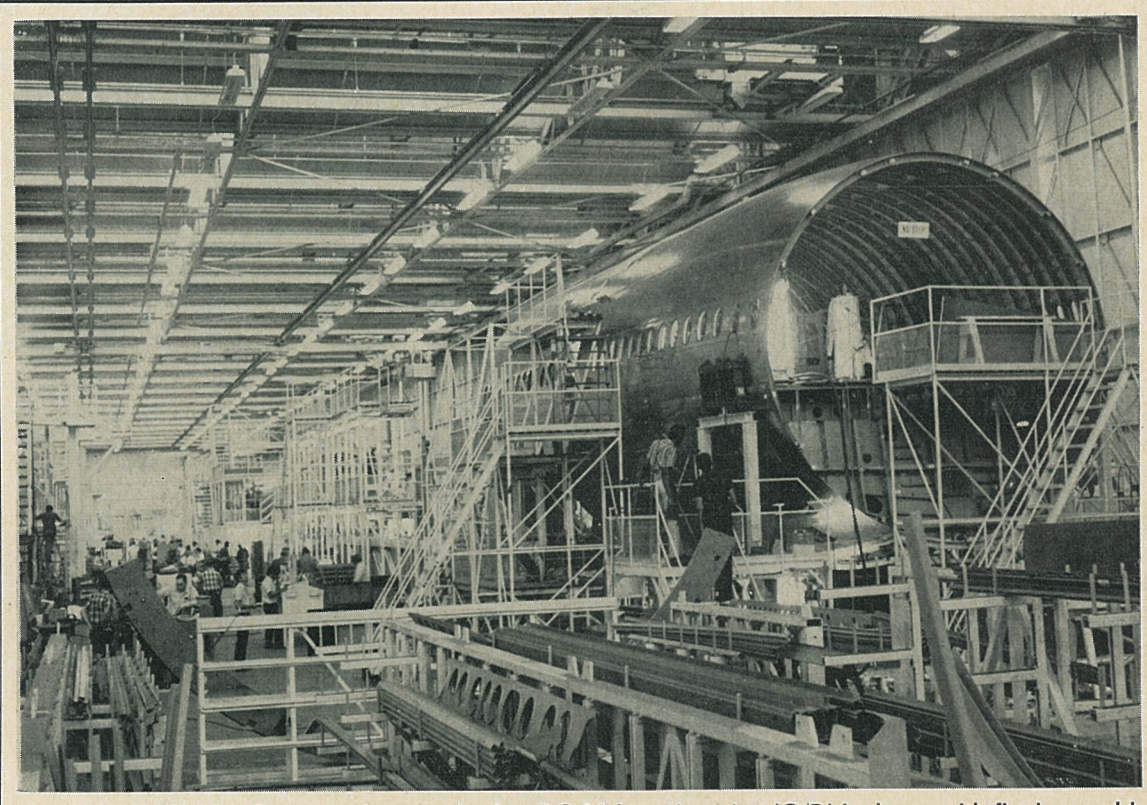


FINAL TOUCHES—First complete production DC-10 barrel section (C/D) is shown with final assembly fixture where cargo and passenger doors are fitted to fuselage before delivery to Douglas Aircraft Co. in Long Beach. Section represents part of first of 300 fuselages to be built by Convair under contract extending through 1974.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

Q—Why can't the higher amount of cash value life insurance become effective soon after an individual becomes eligible due to a salary increase? Sometimes it takes quite a while to take effect.

A—The Plan provides, "If you become eligible for higher amount of insurance as a result of increase in salary, you may request additional coverage within the next 31 days and the increase will become effective on the first of the month following your request."

★ ★ ★

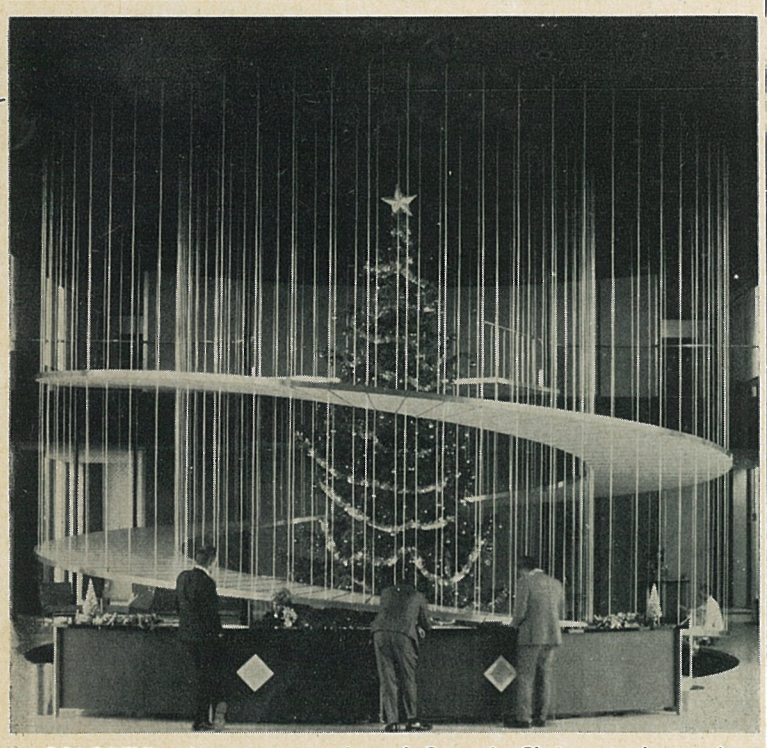
Q—I missed the Product Display at Lindbergh Field. Is there any way for me to get a commemorative medal?

A—A limited number of coins and souvenir editions of *GD/NEWS* are available at Convair's employe benefits offices—while they last.

★ ★ ★

Q—For some time last fall there was a large amount of junk metal piled next to Bldg. 33 at KM. I complained with no success. Then suddenly it disappeared. What happened?

A—That was salvage material a subcontractor had stored temporarily.



COLORFUL—Most spectacular of Convair Christmas decorations was located in foyer at Kearny Mesa plant's Bldg. 2 where tree was located in center of spiral staircase. Three of support bars were removed temporarily to permit insertion of tree, then replaced.

Delivery Nears For First DC-10 Section

Convair division's DC-10 fuselage program crews expect to celebrate the New Year by delivering the first complete barrel section (C/D) to McDonnell Douglas Corp. this month.

"Delivery will be a gratifying result of one and a half years of concentrated engineering, tooling and manufacturing effort," said Jack Hurt, Convair DC-10 program manager.

Mid-January is targeted for the barrel to "go out the door" and aboard Aerospace Lines "Super Guppy" transport plane for shipment to Douglas' Long Beach, Calif., plant.

Cargo and passenger doors have been fitted and last-minute changes are now being incorporated into the C/D section.

"The DC-10 team and all of the people involved have put in long hours and worked very hard for this delivery," said Hurt. "More of such extra effort and sacrifice will continue to be required for at least the next six months, however, to get the initial group of fuselage sections to Douglas in accordance with their program needs."

Remaining sections (E and F/G), which will complete the first production fuselage, are nearing their final assembly fixtures and are slated for delivery next month.

Section F/G has now moved into the third assembly station from the end of the production line. Here major side panels and floors are mated. Its next station is the revolving or "turn over" fixture which allows the entire fuselage barrel to be turned 180-degrees and the top panel attached (DC-10 fuselages are assembled in inverted position up to this point.)

Section E is in its next-to-last fixture where the floor, main landing gear box structure and major panels are attached.

Convair's subcontract calls for production of 300 completed fuselages to be delivered through 1974.

McDonnell Douglas has scheduled the "roll out" of its first production DC-10 tri-jetliner in July with its maiden flight set for September. The 600-plus mph wide-bodied passenger craft will carry up to 345 people and has a cargo capacity of an additional 3,040 cu. ft.

Atlas F Launches Re-entry Vehicle

An Atlas F booster sucessfully launched an experimental re-entry vehicle in the Advanced Ballistic Re-entry Systems (ABRES) program, Dec. 12, from Vanderberg Air Force Base.

Management Club Plans Sports Night

"The Lighter Side of Sports" will be the theme of the Convair Management Club meeting at 6:30 p.m. Friday, Jan. 23, at Balboa Park Club.

Sports figures expected to speak include Pete Newell, Max McNab, Buzzi Bavasi, Emil Karas, and Don Coryell.

Cost for the evening, including beverage and pizza, is $2.

Food will be served from 6:30 to 8 p.m. Executive sponsor is Ken Newton, director of launch vehicle programs.

Work on DC-10 Skins Slated For KM Plant

Convair division will install a giant new stretch press at the Kearny Mesa plant which will give the division a "stretch press capability equal or superior to that of any major aerospace company in this part of the country."

The press will have a 500-ton pulling capacity.

According to Jack Velguth, field engineer supervising the installation, the new press will be a "significant improvement" in Convair's capability in this area.

The press will be installed in the northeast end of Bldg. 5 where a hole 22 feet wide, 109 feet long, and 13½ feet deep has been excavated to house the giant machine.

Scheduled to be delivered the middle of February, the press will weigh more than 500,000 pounds. The installation represents a capital investment of more than $750,000.

The first job of the press, after being turned over to production sometime in April, will be to

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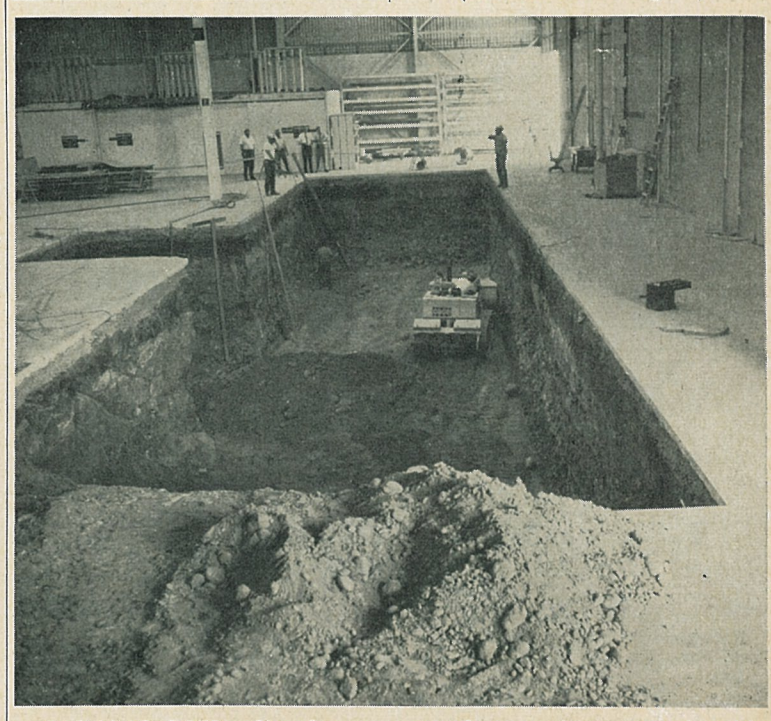


DIGGING DEEP—Site for new stretch press is prepared inside Bldg. 5 at Kearny Mesa plant. Although photo angle is deceptive, tractor gets in and out via steep dirt ramp in foreground.

Lyman Josephs Appointed General Manager of Convair

(Continued from Page 1)

lines that are mutually supportive rather than competitive. The grouping will, therefore, take advantage of the integrity of the separate divisions.

Josephs has 28 years experience in the aerospace industry. At Convair he has been program director of the F-14 Navy fighter contract definition and program director for the proposed CARA, a twin engine tilt wing V/STOL based on the Canadair CL-84 prototype.

Before becoming director of advanced systems with Convair, he spent two years as director of aircraft development and modification programs at Martin's Baltimore division.

Earlier, Josephs spent 18 years as a project management specialist at Chance Vought Aircraft (now Vought Aeronautics division of LTV). His assignments included serving as project engineer for XF7U-1, F7U-3, and XF8U-1 aircraft; chief project engineer; chief engineer-aircraft; and director of engineering.

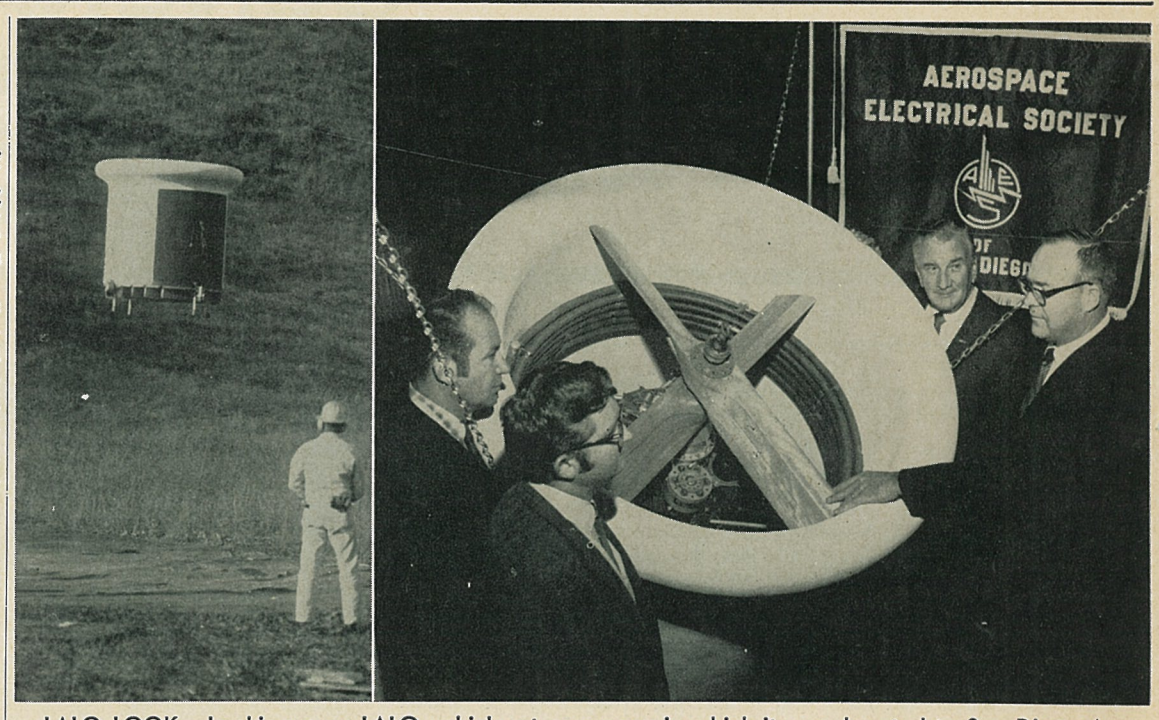
In 1959, as director of engineering, he initiated in-house studies that led to the present XC-142A program. He was program director of the XC-142A from 1962 to 1965.

He received a Bachelor of Science degree from Harvard in 1941 and served as a Navy project officer during WW II in the fighter branch of the Bureau of Aeronautics. Earlier this month he graduated from the Advanced Management program at Harvard.

Ulrey Home Winner In Xmas Contest

The home of Charles E. Ulrey, Convair Dept. 193-3, won first prize in the 200th Anniversary category of the San Diego Junior Chamber of Commerce Christmas Home Decorating Contest.

A picture of the decorations, gracing the home at 4614 47th street, appeared Dec. 21 in the San Diego Union.



LALO LOOK—Looking over LALO vehicle at ceremony in which it was donated to San Diego Aerospace Museum, from left, are Bob Wavrin, Aerospace Electrical Society chapter president; Clark Hay, 1968 AES president; Col. Owen Clarke, USAF (ret.), museum director; and Ed Velton, former LALO program manager. Vehicle is shown during flight test in photo at left.

Work on DC-10 Skins Slated For KM Plant

(Continued from Page 1)

stretch-form skins for the DC-10 project.

DC-10 skins will arrive initially at Lindbergh Field, where protective coatings and other preparatory work will be done. They then will be transferred to Kearny Mesa for stretch-forming and will be returned to Lindbergh Field.

In the planned configuration, the press will be able to handle skins up to 40 feet by 100 inches wide. However, the press could be extended to handle skins 60 feet long without further excavation work.

The press also will have the capability of working on titanium skins.

In support of the press, a 60 by 30 foot door will be installed on the east end of Bldg. 5, two overhead cranes will be extended 160 feet to service the press, and a new crane bridge and hoist will be installed.

The press will be operated with a 250-horsepower hydraulic motor.

Installation is being supervised by plant engineering, Dept. 250-2, with most of the work being handled on a subcontract basis.

Fellowships Open At Tennessee U. Space Institute

Information on University of Tennessee Space Institute research fellowships for MS and PhD degree candidates can be obtained by calling Everett Lindem of Convair division educational services, ext. 2564 LF.

Two Convair employes, Ola Brevig and Phillip Kessel, now are on educational leave and working toward doctoral degrees at the institute.

Interdisciplinary research opportunities are in mathematics, fan engine stall problems, MHD power generation, supersonic and hypersonic aerodynamics, sonic boom research, suppression of acoustic noise from jet engines, laser physics, and validity of finite band width measurements in inhomogeneous radiating gas.

Other UTSI research opportunities — in cooperation with the U. S. Air Force Arnold Research Center — are for studies of radiation properties of cryodeposits, hemispherical emittance and reflectance in environmental chambers, heat transfer on cryopumping fins, mechanics and heat transfer in helium transfer lines, heat transfer rate, low-density hypersonic flow, optical information processing, atomic and molecular spectroscopy, aerodynamic simulation testing, V/STOL aerodynamics, and structural dynamics-vibrations.

LALO Prototype Refurbished, Joins Aerospace Museum

The prototype LALO (low-altitude observation system) vehicle, developed early in the 1960s by Pomona and Convair divisions, has been refurbished by members of the San Diego chapter of the Aerospace Electrical Society (AES) and presented to the San Diego Aerospace Museum for display.

The ground-controlled ducted-fan prototype vehicle, powered by a four-cyclinder 50-hp boat motor with two counter-rotating propellers, looked like a "flying barrel" and was designed for use with a TV camera to give a battlefield commander a first-hand look "over the hill."

It is about 4 feet high and 5 feet in diameter, took off and landed vertically, flew at 165-mph at altitudes to 20,000 feet, and had a flight duration of about an hour.

Flight direction was through an on-board autopilot which received commands from the ground controller. Four sets of exhaust vanes provided pitch, yaw, and roll control.

Test flights, most of them at about 500 feet altitude, were run in 1962 at Camp Pendleton and tethered demonstration flights once were conducted in a hangar at the General Dynamics Harbor Drive facility in San Diego.

Although primarily designed for use with "real time" TV and radar, it could be equipped with a camera to take and return reconnaissance photos. It could be launched and recovered from unprepared sites and could hover over targets of interest.

Ed Velton, VTOL project engineer in Convair's Dept. 580-1, was program manager when LALO was developed at Pomona division in 1961 and transferred with the program to Convair division in 1963.

Clark Hay, of Convair's Dept. 551-0, 1968 AES chapter president, arranged for donation and refurbishment of the craft. Bill Ochodnicky of Dept. 520-0 assisted with arrangements.

Larry Chabot, Dept. 545-2, designed the mounting frame in which the LALO is displayed in the museum. Bob Bohler, Dept. 545-2, Bill Eaton, Dept. 553-2, and Willie Martin, Dept. 031-0, assisted with the refurbishment.

Con-Trib-Club Leaders Cited

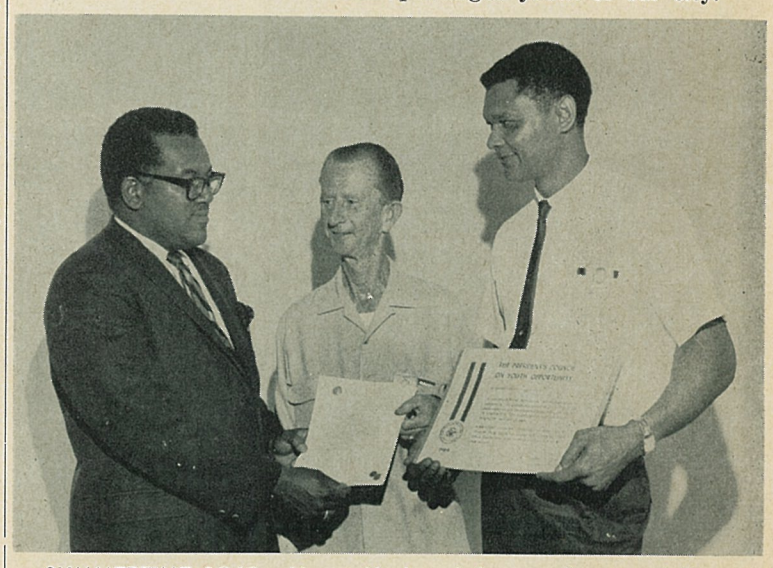
Convair Employes' Con-Trib-Club and two of its committee members have received citations from the President's Council on Youth Opportunity for their participation in Project Summertime 1969.

Members were Paul Allgire, committee chairman and supervisor of employe benefits, and Hank Fuller, committee member and material control supervisor.

Project Summertime was a program designed to assist disadvantaged youths last summer.

The citation, signed by Vice President Spiro T. Agnew, was "for outstanding accomplishments in supporting the President's program to enhance the opportunities for disadvantaged youth in the fields of employment, education, health, and recreation during the summer of 1969."

In addition, San Diego Mayor Frank Curran sent an accompanying letter to Allgire, Fuller, and the club thanking them for support and participation in the program which enabled San Diego to "increase the level of activities and programs for the underprivileged youth of our city."



SUMMERTIME 1969—Henry Hodge, left, coordinator of Mayor's Council on Youth Opportunity, presents citation from President's Council on Youth Opportunity and letter from Mayor Frank Curran to Ernie Carson, center, and Hank Fuller, right, of Convair Employes' Con-Trib-Club. Citation and letter were in appreciation for club's support of Project Summertime, program to assist disadvantaged youth. Fuller also received personal citation.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Jan. 1 and Jan. 15.

Forty-Five-year: Dept. 400, Earl H. Wesp.

Thirty-year: Dept. 002, H. B. Bender; 250, L. G. Mulryan; 514, D. D. Strange; 562, W. A. Pickers; 597, C. W. Chapman; 756, M. H. Peet; 985, A. L. Scheibel.

Twenty-five-year: Dept. 015, Mariana C. Costantino; 059, C. W. Robinson; 400, J. C. Lee; 403, J. H. Slovacek; 780, O. L. Huffman.

Twenty-year: Dept. 015, R. A. Goad; 250, R. E. Hawkesworth Jr.; 460, Viola W. Whitten; 595, R. G. Wright; 579, R. A. Sherman; 836. W. J. Beers.

Fifteen-year: Dept. 015, R. L. Patrick, L. F. Stephens, D. H. Yaeger; 059, C. F. Lehr; 954, Mildred C. Groomer; 964, R. H. Blumling; 988, M. B. Rodriguez.

Ten-year: Dept. 001, C. E. Sadler, F. Salas; 016, Emma J. Fults; 059, Emilie Schroeder; 101, R. J. Grivno, Rose A. McCormick; 191, Mildred B. McArthur; 199, R. K. Jeffries; 515, V. P. Donnelly, Thressa L. Smyth; 565, Estelle J. Swank; 572, W. E. Nichols; 700, H. W. Burns; 952, G. R. Stone; 966, Mary Ann Feeler; 979, Betty J. Adams, H. Wieder.

ELECTRONICS

Service emblems issued during November and December.

Thirty-year: Dept. 424, R. J. Hogue.

Twenty-five-year: Dept. 711, I. F. Thomson.

Twenty-year: Dept. 427, C. R. Clagett.

Fifteen-year: Dept. 421, Ellen B. Weight; 562, F. L. Packard; 617, G. W. Eaton; 921, R. DiBella, J. M. Herring, H. O. Story.

Ten-year: Dept. 422, C. R. Trachta; 612, L. DeBeer; 617, L. F. Bell.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Dec. 12.

Dept. 454, J. G. Adams, $15; 507, W. S. Alcaraz, $75.50; 059, A. W. Bailey, $15; 985, W. T. Black, $15; 027, J. D. Brittain, J. H. Parsons, $11.50 each (joint award); 019, T. L. Coone, $15; 579, R. G. Crouch, $25.70; 027, J. G. De Lara Jr., $47.50; 027, G. N. Evans, $22; 524, C. M. Gilliland, $15; 519, C. Greve, 195, J. Singers, $9.70 each (joint award); 059, B. H. Hill, $105.20; 130, P. M. Houtkooper, $81.30; 588, J. A. Howland Jr., $35; 985, R. W. Lee, $15.

Dept. 507, W. J. McKillip, $173.20; 149, C. A. McKinney, $51.20; 019, M. T. McNeel, $15; 149, R. C. Miller, $320.80; 756, J. J. Monty, H. E. Naish, $12.05 each (joint award); 979, C. T. Murray, $100.20; 141, K. A. Neas, $83.40; 027, J. H. Parsons, $127.30; 027, L. F. Pendarvis, $25.30; 454, R. D. Prock, $15; 985, P. W. Rogers, $15; 027, F. J. Serio, $85.80; 195, J. Singers, $48.50; 731, R. L. Snider, $15; 985, F. J. Tapken, $15; 027, C. W. Westhydeman, $22.10.

Employe Suggestion awards approved for the week ending Dec. 19.

Dept. 574, C. F. Carpenter, $257.80; 144, J. F. Choitz, $15; 143, D. G. Clark, $15; 401, R. E. Clark, Jr., $191.40; 985, H. E. Crabtree, $15; 059, V. Dressler, $870.50; 001, S. Elhard, H. G. Mondy, $7.50 each (joint award); 027, G. N. Evans, $15; 836, S. Farrington, $25; 149, K. L. Feeley, $56.10; 002, R. Gamboa, $24; 250, J. L. Glover, $15; 149, G. J. Hendrix, $41.10; 401, C. E. Jones, $15; 149, T. S. Knight, A. Summers, $31.10 each (joint award).

Dept. 149, T. W. Luers, $186; 454, G. W. Lyst, $93.50; 401, S. M. Martinez, $53.10; 019, L. A. Moll, $15; 517, E. C. Payne, E. M. Shew, $86.70 each (joint award); 572, F. J. Phillips, $48.50; 250, L. Price, $40; 524, B. N. Reynolds, $15; 733, H. Staten Jr., $15; 985, P. H. Stephens, $15; 744, M. A. Thomas, $51.30; 526, M. G. Walsh, $15; 507, C. N. Walter, $148; 518, R. J. Zenger Jr., $43.80; 149, V. J. Samuelson, $102.30.

Employe Suggestion awards approved for the week ending Dec. 24.

Dept. 761, J. K. Bennett, $18; 250, C. W. Carlson, $15; 027, R. E. Handley, E. J. Klinger, $19.20 each (joint award); 130, J. B. Harrison, $15; 860, J. Letzring, $15; 015, D. O. McKay, $15; 810, P. K. Noland, $983.40; 780, P. C. Pond, $15; 027, M. C. Tracy, $36.90; 979, D. F. Waring Jr., $82.30; 027, L. H. Wilson, $30.10.

Invention Disclosures

CONVAIR

CHRISTIAN—E. L., Dept. 491. Pre-Setting Device for N/C Machine Cutters. Universal Drill Point Splitting System. (Two inventions.)

ELLSWORTH—A., N. L. FREDERICK, H. E. KOBRICH, C. E. ROYE, Dept. 491. Machine Cutter Torque and Force Measuring evDice (Sensor).

JEWETT—H. R. Jr., Dept. 962. Continuous-Joint Separation Device.

KAEDING—D. E., Dept. 515. Skyweb and Skywire.

MAKI—S. C., Dept. 551. Method for Compensating Low Frequency Gyro Errors.

NORTH—B. F., Dept. 584, R. K. WALTER, Dept. 550. Fuel Cell Voltage Regulator.

WALIGORSKI—R. P., Dept. 553. Digital Computer Controlled Electronic Test Stations.

Papers Presented

CONVAIR

SHIH—K. T., Dept. 596. "Anode Heat Flux Density of High Current Arcs." ASME Winter Annual Meeting, Los Angeles, Calif., Nov. 16-21.

Papers presented at Aircraft/Stores Compatibility Symposium, Ft. Walton Beach, Fla., Nov. 19-21.

BEARD—John E., Dept. 508. "Reducing Costs for Scaled Dynamically Similar Drop Stores."

CAMPBELL—G. F., R. D. SMALL, Dept. 597. "Prediction of Stores Separation Characteristics for Internally Stowed Weapons."

REINMAN—William A., Dept. 597. "Improving Volumetric Efficiency of Bomb Carriage."

Retirements

CONVAIR

HINELINE—Richard L., Dept. 967-3. Seniority date Oct. 18, 1955, retired Nov. 28.

McLAUGHLEN—John F., Dept. 130-1. Seniority date June 4, 1942, retired Dec. 5

MORGAN—William M., Dept. 141. Seniority date June 16, 1958, retired Nov. 3.

NORRIS—Florence A., Dept. 833-2. Seniority date Feb. 15, 1951, retired Dec. 2.

SOUVINEY—Glendon H., Dept. 831-0. Seniority date July 16, 1958, retired Oct. 16.

Personals

CONVAIR

The family of B. J. Moore, Dept. 149, wishes to express thanks to the many Convair friends for their kind thoughts and expressions of sympathy during the recent loss of our son, Kevin.

The B. J. Moore family

* * *

We wish to express our gratitude and thanks to the many friends at Convair, who extended expressions of sympathy and thoughtfulness during the loss of our dad and husband, William Sileneck, of Dept. 015.

The Sileneck family

* * *

Our thanks to Dept. 826 and the Con-Trib-Club for their help in our time of need.

James Richards and family

Deaths

CONVAIR

HICKOK—Finis P., retired Dec. 29, 1958, Dept. 400, died Nov. 24. Survived by his wife, Aurelia.

OLIVER—J. Fussell, retired Jan. 11, 1963, died Dec. 15. Survived by his wife, Caroline.

VASIL—Michael, Dept. 962, died Nov. 24. Survivors include his wife, Mary, son, Richard, a brother and sister.

General Dynamics News

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Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

RECORDS MGT. MEET—General Dynamics' records management representatives from western region met in San Diego last month to discuss records retention and related activities including microfilm projects, vital records protection, and the West Coast records center. Group toured DatagraphiX Education Center and witnessed Micromation demonstration in ServiCenter. Pictured in center's computer area, left to right, Mark Brown, DatagraphiX computer operator; Bob Donaldson, Canadair Limited; Doug Zink, Convair division; Gloria Wilkes, Corporate records management analyst; Len Hanson, Electronics-SD; D. H. Bailey, Pomona; Carlton M. Barlow, Corporate Headquarters; Jack Waller, Convair; Don Pardee, Convair; Bob Morse, GD Corporation; Frank Decoteau, Pomona; M. B. Gross, Fort Worth.

National Exposure For Engineer Image Sought

Increased emphasis on preparation and presentations of technical papers by General Dynamics engineers and scientists during 1970 was called for recently by E. H. Heinemann, Corporate vice-president-special projects.

The emphasis upon paper presentations and participation in activities of technical and engineering societies is designed to give greater national exposure to the creative talents that mark engineering organizations of General Dynamics divisions/subsidiaries, Heinemann indicated.

Heinemann suggested that engineering managements set up machinery for a more organized approach to selection of technical meetings and symposia for GD representation, and recommend subjects on which papers would be desirable in support of sales efforts and image building.

Senior engineering executives themselves were urged to participate in paper presentations.

Pollution Attack Theme For '70 Engineers Week

National Engineers Week will be celebrated for the 21st consecutive year during 1970. Dates for the observance are Feb. 22 to 28, the National Society of Professional Engineers announced.

In cooperation with other industrial and engineering organizations, NSPE annually sponsors career conferences, exhibits, plant tours, etc. in various communities.

Theme for the observance will be "Engineering . . . Environmental Design for the 1970s" and will focus on the "142 million tons of smoke and noxious fumes pumped into the atmosphere each year, the mountains of discarded automobiles and junk, the colossal pollution of our rivers, lakes and seashores, and generally the devastation of our whole living environment."

NSPE further noted that the week will stress "creative technical design to protect and preserve our natural resources for the next generation."

As they have in the past, General Dynamics divisions/subsidiaries are expected to take part in local community observances as an adjunct to the Corporation's continuing Engineering Achievement Awards program.

Montague Elected To National Office

Robert Montague, Convair chief of motion pictures and television, has been elected president of the Information Film Producers of America, Inc.

It is the first time that the organization, the professional association of industrial and non-theatrical film makers, has elected a national president from outside the Hollywood area.

Montague served as a vice-president during 1969.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

JOSEPH BEGOS (1963) from Electric Boat division to Quincy Shipbuilding division as material control supervisor; **JOSEPH COSTELLO** (1966) from Quincy to systems economic analyst, Electric Boat; **DOMINIC DECRESCENZO** (1951) from Convair to configuration control specialist, Electronics-SD; **ARTHUR DAVIDSON** (1966) from Electric Boat to Quincy as production control coordinator; **JOSEPH RAGUSA** (1953) from Convair to senior systems analyst, Stromberg DatagraphiX; **ROBERT EDDY** (1954) from Electric Boat to Quincy as manager of quality assurance; **JAMES L. TIMM,** from Pomona to senior mechanical calibration technician, Convair; **ROY C. PEERY** (1967) from DatagraphiX to Electronics-SD as buyer; **GEORGE FINLAYSON** (1952) from Electric Boat to materials engineer, Quincy; **MICHAEL J. KNOP** (1967) from Electric Boat to Electronics (Electro Dynamic) as senior project engineer; **ROBERT B. WATSON** (1967) from DatagraphiX to quality control engineer, Electronics-SD; **ROBERT TILTON** (1965) from Electric Boat to Fort Worth as quality control engineer; **JOHN L. RANDALL** (1955) from Electric Boat to manager of long range planning, Quincy; **CONRAD SHARPE** (1959) from Electric Boat to Quincy as manager of operations analysis.

Viruses Often Guilty

Persistent Sore Throat or Fever Means Better Consult a Doctor

(Following is one of a series of health articles authored by General Dynamics physicians under Corporate Headquarters sponsorship.)

By DR. JOHN A. MORTON*
Medical director, Stromberg-Carlson

Respiratory infections account for almost one-quarter of all illnesses suffered by working men and women in America today. This percentage increases markedly during the winter months, especially during epidemics of influenza, such as was experienced during the winter of 1968-69, when an estimated 30 million people were affected by this virus alone. In this category of disease is included all the infections of the ears, nose, sinuses, throat, tonsils, bronchial tubes, and the lungs.

Viruses have been found to be responsible for the great majority of these respiratory diseases—up to 90 per cent. There are several different types, the commonest being the adenovirus, which is generally thought to cause the common cold. The influenza virus, and other less well known viruses such as coxsackie, ECHO, and herpes also cause a significant number of respiratory infections.

Bacteria also cause some of these infections, streptococcus and staphylococcus being the most common. Because these are serious, it is important that they be diagnosed by a physician promptly.

A general rule of thumb for the average patient to follow when he has a "cold" and is deciding whether he should see a physician is this: if the prominent symptom is a sore throat, or if the temperature stays above 100 degrees for 48 hours, then he should see his doctor.

Using these two criteria the patient will get to a physician early, when the chances are good that he has a bacterial infection that will respond to antibiotics. The viral respiratory diseases do not respond to antibiotics, however, and generally run a course of illness that lasts about a week. Treatment should be directed toward relief of symptoms only. Antibiotics do not influence the course of these diseases and may even be harmful.

Since there is no specific treatment for the great majority of respiratory infections, prevention is most important. Other than the vaccine for prevention of influenza, which today is not recommended for young healthy people

and is only estimated to be 50 per cent effective, no other vaccines are available, as yet, for prevention of respiratory infections caused by all the other viruses.

Respiratory infections are the most contagious of all the infectious diseases. Fresh colds appear to be more contagious than older ones with children's colds proving to be more contagious than those of adults. Low temperatures and inclement weather have less to do with precipitating a cold than does the relative humidity of the air we breathe. During the winter heating season, there is a marked increase in the incidence of colds. Lowered humidity in heated rooms dries out the nose and throat, contributing to the susceptibility to infection. A window left slightly open when retiring at night and/or a water reservoir left on a radiator would restore some of the lost humidity in the bedroom and would help to eliminate the dried out condition in nose and throat. In general, a relative humidity of 45 per cent should be maintained in homes and offices as a preventive measure.

Viruses and bacteria are transmitted from one individual to another by breathing, sneezing, and coughing. It is practically impossible to prevent their spread inside a house or in a close work environment. However, a person with a cold should be careful to cover a cough or sneeze with a handkerchief; use his own drinking glasses, towels, and other personal items; wash hands frequently; and, above all, stay away from close contact with other people if at all possible. The optimal time of contagion is during the first two days of illness and the incubation period is from two to six days after exposure.

Prevention of respiratory infections, therefore, depends on each individual's ability to keep his resistance at the highest possible level. To date, "natural" foods, vitamin supplements and forced exposure to sunlight and fresh air have not proved to have any noticeable effect on susceptibility to respiratory infections. Attention must be given, however, to adequate rest, a balanced diet, and avoidance of chilling by wearing proper clothing for the season. Of these, rest is easily the most important, especially for working men and women. These measures are even more important during the winter months or during influenza epidemics, when the attack rate is high.

***Dr. Morton holds a bachelor of science degree (biology) from Holy Cross and received his medical degree from Pittsburgh Medical School in 1950. He has served in both the U. S. Navy and the U. S. Air Force as a reservist. Active in Rochester community medical circles, he is a former president of Blue Shield.**

Australia Trade Mission Visits Corporate Hdq.

Ten leading industrialists and government officials from Australia visited General Dynamics Corporate Headquarters in New York City last month.

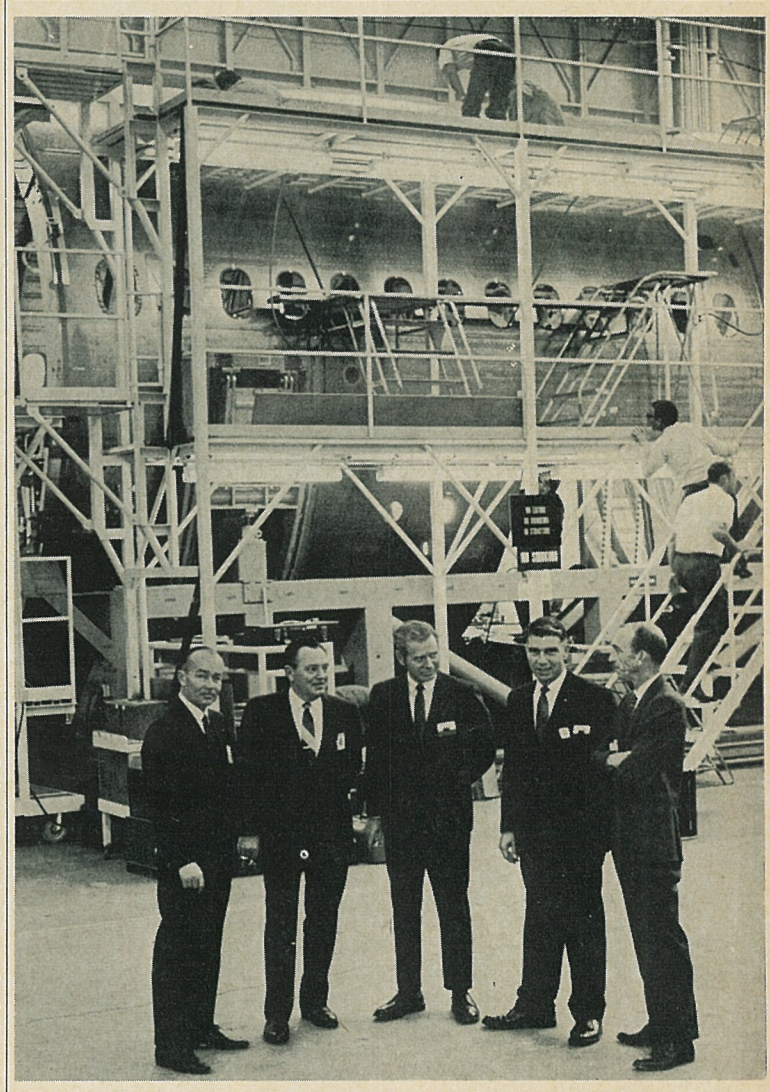
As members of the Australian Defence Industries Mission, they are touring the United States, meeting with a cross-section of American companies. Purposes of the visits are to improve relationships, to explore possibilities for joint programs and to gain a better appreciation of U.S. defense procurement activities.

Roger Lewis, GD president, and members of his staff met with the mission.

The visit was arranged by the Australian Embassy.

Visiting the Corporate Office were: Sir Ian McLennan, managing director, Broken Hill Proprietary Ltd.; Sir Frederick Scherger, chairman, Trans Australian Airlines and Commonwealth Aircraft Corp.; Sir James Kirby, chairman, James N. Kirby Ltd.; Sir Samuel Jones, chairman and managing director, Standard Telephones and Cables Pty. Ltd.; John Clarkson, managing director, General Industries Ltd.; David Elix, managing director, Kelvinator Ltd.; Neil Currie, deputy secretary, Department of Trade and Industry; Donald Bruce, counsellor (supply), Australian Embassy, Washington D.C.; Peter Marcusson, director, Department of Trade and Industry; Ian Angus, superintendent (materials), Department of Supply.

Taking part from the Australian Consulate General were: Frank C. Murray, acting consul general; R. K. Scott, senior trade commissioner; M. G. B. Coultas, trade commissioner, John Collier, assistant trade commissioner.



ASSEMBLY LINE VISIT—DC-10 program leaders from Convair division and McDonnell Douglas Corp. discuss fuselage assembly operations during tour of Lindbergh Field plant. From left are: W. L. Van Horn, Convair director of operations; Jess L. Jones, Douglas vice president-procurement and quality assurance; John W. Stilwell, director-DC-10 program manufacturing at Douglas; John C. Brizendine, vice president and general manager of Douglas' DC-10 program; Jack Hurt, Convair DC-10 program manager.

DIRECTION—Discussing scene from TV film, "Atlas E/F, the Second Time Around," are Brig. Gen. Robert A. Duffy, deputy for Re-entry Systems, SAMSO, Clarence Smith, SAMSO Atlas Systems Program Office, Gerry Muller, SAMSO-CCTV production director, and Rudy Romero, Atlas E/F Program Office.

Cost Advantage of Using Atlas E/F Told in Film

The cost advantages of using ex-operational Atlas E and F missiles as boosters for Department of Defense (DOD) ballistic and space launch programs is the subject of an Air Force film, "Atlas E/F, the Second Time Around."

The color video tape tells the story of the series E and F Atlas and explains the significant cost savings available by using them instead of new boosters.

"Using Atlas E/F for ballistic and space missions is good business," explains Brig. Gen. Robert A. Duffy, deputy for Re-entry Systems, Space and Missile Systems Organization (SAMSO), in the film. "A similar new launch vehicle would cost us more than twice what we pay for modifying the launching Atlas E and F boosters."

Additionally, the versatility of the Atlas E/F boosters satisfies requirements for a variety of missions. Using as an example Atlas 107F which launched two OV1 satellites April 6, 1968, General Duffy and Col. Hugh Wynne, Standard Launch Vehicles program director, SAMSO, explain some of the flight path, payload capabilities, and missions of the refurbished Atlas E/F.

When DOD decided to deactivate the Atlas squadrons, and before the first actual deactivation, Atlases were already being planned for flight testing Advanced Ballistic Re-entry Systems, NIKE systems targets and satellite launchings for the Office of Aerospace Research, according to Colonel Wynne.

General Duffy added that "potential uses are being explored for operational satellite programs, safeguard system test programs, and future re-entry vehicle development tests."

At the outset of the E/F modification and launch program, there was an inventory of 140 E and F boosters made up of 99 F and 41 E missiles. Of this total, nine were allocated to non-flight programs.

Of the 131 available, 34 have been launched as of Nov. 1, 1969 and "we have firm and likely requirements for 32 additional launches through calendar year 1975," said General Duffy.

The remaining 65 boosters have not yet been scheduled but both General Duffy and C. J. Dunn, E/F modification and launch program manager at Convair, said "We intend to launch out the inventory."

"Continued high reliability and rigorous adherence to approved processing and quality control procedures, accompanied by low cost, will enhance the Air Force and Convair's position in achieving this objective," Dunn said.

The missiles are stored at Norton AFB while awaiting their turn to enter the E/F modification program. From Norton they are transported to the Kearny Mesa facility where they are transformed from operational missiles to space boosters.

From San Diego, they are transferred to Vandenberg AFB for checkout and launch by Convair crews.

The film was produced by the SAMSO CCTV office for DOD and AFSC with the assistance of the Convair E/F program office and Rudy Romero, Dept. 950-5, the film's technical director.

Resident Director For DC-10 Appointed

McDonnell Douglas Corp. has assigned Jack B. Devine to Convair division's DC-10 fuselage program as resident director of manufacturing operations.

Jack Devine

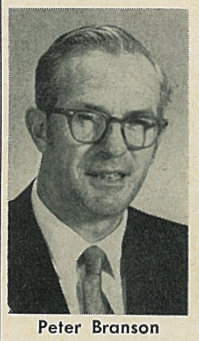
Devine's assignment brings the Douglas resident representative contingent at Convair to 23.

Reporting to J. F. Daniels Jr., Douglas resident manager for DC-10, Devine will be responsible for representatives in six areas including assembly, fabrication, production control, planning, tooling and industrial engineering.

Devine, a mechanical engineering graduate, former Navy pilot and 13-year Douglas veteran, was most recently manager of DC-8 structures at that company's Long Beach, Calif. plant.

BRANSON DECORATED BY COAST GUARD

Peter S. Branson, a retired Coast Guard captain and staff assistant in Convair division's ocean data systems program office, has been awarded the Coast Guard Commendation Medal for his efforts in establishing the Coast Guard marine science program.



Peter Branson

Adm. Charles Tighe, 11th Coast Guard District commander, presented the medal in ceremonies at the Coast Guard Air Station in San Diego.

The marine sciences program was implemented while Branson was head of the marine sciences division at Coast Guard Headquarters in Washington from July, 1966, to March, 1968.

A graduate of the Coast Guard Academy, Branson had 24 years of active duty with the Coast Guard before retiring in 1968. He holds a master's degree in oceanography from the University of California's Scripps Institution of Oceanography in La Jolla.

Branson specializes in oceanography and marine operations with Convair's ocean data systems program office, which develops and operates oceanographic and meteorological ocean data stations and large navigational buoys.

Brochures Describe New Dental Plan

Brochures on the Convair division Dental Plan have been distributed to employes through their departments. Any who have not received a brochure should phone employe benefits, ext. 2657 KM.

Convair Depts. Play 'Santa' For 17 Families

Christmas was happier for more than 100 persons in 17 Convair families because of food, clothing, gifts, turkey dinners, and Christmas trees provided by employes of the material department and Dept. 027.

Material department provided assistance for 88 people in 15 families and Dept. 027 for 13 people in two families. Need of recipients were verified through the Convair Employes' Con-Trib-Club.

V. O. Olson, coordinator for the material department project, said employes donated $1,947.10 in addition to providing a big truckload of food, clothing, and gifts.

In addition to turkeys, wholesale grocery orders, and gifts, each individual in the 15 families aided by the material department received $17 in script from a discount store for personal purchases.

Others on the material department committee were C. W. Nelson, D. W. Schultz, Doris Parker, R. J. Archibald, R. J. Fedeli, and Henry Fuller. Several employes provided home-made cakes, cookies, and candy for coffee breaks to help secure contributions for the project.

Dept. 027 provided three pickup truckloads of groceries, clothing, and other gifts and about $400 in gift certificates, cash, and new children's shoes for the two families it assisted. Christmas trees were provided for both families and two bunk beds for one of the families with seven children.

Serving on the Dept. 027 committee were Emery Osgood, Wiley Lane, Jim McCarthy, W. K. Wade, Roger Starr, and Steve Persley.

Four Convair Men Finish MSMS Work

Four Convair division employes last month completed requirements for the Master of Science in Management Science degree at United States International University in a program sponsored by Convair division that began in the summer quarter of 1968.

They were Bill Evans of Dept. 963-1, Joe Zintel of Dept. 780-3, Don Moffat of Dept. 543-2, and Bob Carlquist of Dept. 145-2. Nine courses were required in the program and the three will receive their degrees at annual graduation ceremonies in June.

Three employes previously had completed the program through multiple-course enrollment and completion of related courses before the program began. They were John Rodenrys of Dept. 574-3, Ken Catlin of Dept. 553-7, and Larry Bay of Dept. 533-1.

Seventy division employes are currently enrolled in the program. Courses originally were given in-plant but are now being conducted at USIU's new Miramar campus. Information on the program is available through educational services offices.

QC Section Meeting For Jan. 12 Shifted

The location of the Jan. 12 meeting of the San Diego section of the American Society for Quality Control has been changed to the Kon-Tiki Room of the Catamaran Hotel, Mission Beach.

S. W. Shepard, vice president, secretary and general counsel of Rohr Corp. will be the featured speaker at the 6:30 p.m. meeting. Call Eric Callard, ext. 2243 KM for information.

Chemical Processing Facility Expanded

Bldg. 75, a chemical processing facility at Convair division's Lindbergh Field plant, is being extended north and south to provide an additional 15,600 square feet of floor space for installation of new anodizing and other electro-chemical processing tanks, drying ovens, and paint spray booths.

R. D. Leonard, plant engineering general supervisor, indicated that more than $1 million is being spent for building additions and modification of processing tanks and related equipment.

The building extensions will have traditional steel framing and ribbed steel sides. An additional 4,600 square feet is being added at the north end and 11,000 square feet at the south end. Southern and Associates of Long Beach is the contractor.

Project engineer for Convair is Don Stewart with design assistance from Steve Garan, Irvin Hodge, and Keith McConnell. Robert Tilton of purchasing handled construction contract negotiations.

Production parts will be protected from corrosion through anodizing and painting in the facility.

Stewart said five new tanks for chromic acid and other anodizing processes will be added, three existing tanks will be reworked, and three other existing tanks and a drying oven will be relocated. Three new paint spray booths and a new 40-foot infrared drying oven will be installed.

Each of the five new anodizing tanks will be 40 feet long, 4⅔ feet wide, and 8 or 10 feet deep to accommodate large skins and other parts for DC-10 fuselage, C-5 empennage, and other Convair programs. Two large DC-10 skins can be anodized at one time in a single tank.

"Washing scrubbers" will be installed on each tank to remove pollutants from exhaust air in a water bath before the exhaust air leaves the building through stacks.

An overhead bridge crane and monorail system will be installed in Bldg. 75 for use in transporting parts through the processing facilities and to adjoining Bldg. 2 inspection and preliminary assembly areas.

Some external facilities for the Convair automated landing field mats line have been removed and stored to provide additional space for the expanded chemical processing facility.

The fire protection system for the building also is being updated and an old underground water main is being replaced with above-ground pipes.

Some of the new processing facilities are planned for initial use by Feb. 1, with completion of the project scheduled in mid-March.

GERTRUDE HUNTER, EDITOR, RETIRING

Gertrude Hunter, editor of the bi-monthly Convair Traveler digest for operators of Convair division aircraft since 1949, will retire this week after more than 25 years service.

After starting as chief telephone operator for Consairways in 1943, she joined the staff of Consolidated Vultee's Field Service Bulletin, a four-color magazine, the following year and became editor a few months later.

She worked on maintenance and flight manuals and service bulletins during the years following World War II and edited Convair Traveler since its inception.

She became guardian for three of her late brother's children 11 years ago. Her own husband had died a year earlier.

"They've always been just like my own," she said, "and I'm extremely proud of them." Don, now 19, is a student at San Diego State College; Mike, now 21, is a Marine Corps sergeant in Viet Nam; and Connie, now 22, is married and the mother of two.

Mrs. Hunter plans a trip to Australia and the orient.

Coins From Pool Distributed to Needy

A total of $52.27 was collected from the reflection pool in Bldg. 2 at Convair's KM plant at Christmas. The money was given to the San Diego Police Department for its needy family program.

Plan Under Way for Reviving Chess Club

The CRA Chess Club is being reactivated. Interested persons may call Jack Maughmer, ext. 2659 KM or Art Greensite, ext. 2185 or 1796 KM.

ARTICLE DESCRIBES CENTAUR MISSION

A 30-page feature on the 1973 Viking Mission to Mars, a mission scheduled to use Convair's Centaur launch vehicle, is included in the November issue of Astronautics and Aeronautics.

Convair Hosts State Apprenticeship Group

Convair division was host for a meeting of the California Statewide Aerospace Joint Apprenticeship and Training Committee at the Kearny Mesa plant Dec. 10.

Attending were 29 representatives of California aerospace firms, airlines, the State Department of Education, the California Division of Apprenticeship Standards, and the U. S. Department of Labor Bureau of Apprenticeship and Training.

Jack Croft, chief of educational services for Convair, presented a gavel to the committee chairman, A. L. Anderson of McDonnell Douglas Astronautics.

Apprenticeship problems throughout the state were discussed and subcommittee reports were given on differences of programs, enrollment of minority race personnel, and possible need for inter-company transfer of apprentices.

The committee voted to sponsor a workshop at the California Conference on Apprenticeship in Los Angeles in April.

Representing Convair at the meeting, in addition to Croft, were Marty Stutz of Dept. 401, John Williams of Dept. 407, Fred DeGreef of Dept. 401, and Wayne Turner of Dept. 130.

Dec. 15 Start Of Pin Award

Convair division value control projects, cost reduction proposals, and Employe Suggestions approved after Dec. 15 count toward Cost Reduction Achievement Award pins to be given for each five approved submittals during a two-year period.

The five-credit pin is lavender and white with an amethyst, the 10-credit pin is green and white with an emerald, the 15-credit pin is blue and white with a sapphire, the 20-credit pin is red and white with a ruby, and the 25-credit pin is black with a diamond.

Any combination of approved suggestions, cost reduction or value engineering change proposals will count toward the pins.

An article on the award program in the Dec. 17 issue of GD/NEWS inadvertently indicated erroneously that Dec. 5 would be the starting date.

Bicycle Club Plans Ride to South Bay

The CRA Bicycle Club will begin a 25-mile ride at 9 a.m. Saturday, Jan. 10 from the Security Pacific Bank, Imperial Beach.

Ride leader for the trip to South Bay will be Bill Palmer. For information call Dave Lukens, ext. 2881 KM.

UNIQUE ARTICLE—Discussing aluminum-boron test door in F-106 fuselage are W. H. Schaefer, Convair engineering staff specialist and principal investigator for its development, and Valerie Liddle, Dept. 840-2 receiving clerk. Valerie holds original door that has been replaced with test article.

Aluminum-Boron Part To Be Flight Tested

When an F-106 interceptor begins a series of transonic tests this month it will carry aloft the first aircraft flight test article made from aluminum-boron.

The test program will investigate maneuvering buffet characteristics, but at the same time will offer an opportunity to try out an engine mount access door made of aluminum-boron, produced last year by Convair division as an independent research and development (IRAD) project.

Although small (13½ by 11 inches) the door must withstand considerable structural stress during transonic flight. However, aluminum-boron, while weighing about the same as aluminum, has displayed the strength of titanium and the stiffness of steel.

William H. Schaefer, principal investigator for the project, said the material was created from layers of aluminum foil and boron fibers, consolidated into a homogeneous sheet and rolled to conform with the fuselage contour, then heat treated.

"We believe this also is the first application of heat treated aluminum-boron for a key structural item," he said. "Boron composites currently being produced and test flown have epoxy rather than a heat treated aluminum matrix."

Boron filament used in the test door was furnished by the Air Force Materials Laboratory at Wright-Patterson AFB, Ohio, and was processed into the final sheet aluminum-boron and donated by Harvey Aluminum Co. of Torrance, Calif.

Solar produced a three-piece, diffusion-bonded titanium I-section stiffner for use in the door assembly.

Schaefer said the Air Force authorized installation of the test article on the F-106 to see how the composite material will perform under actual environmental and stress conditions.

D. J. Forest and Ralph Kiger of Convair Dept. 512 designed the door, Larry Tuttle of Dept. 755 coordinated fabrication, and Art Durson of Dept. 579 was test engineer. Materials research assistance was provided by J. L. Christian, Ray Adsit, L. C. May, and Charles Maikish, all of Dept. 572.

Convair will conduct the buffet boundary flight tests for the Air Force Aeronautical Systems Division during a two-month period to determine buffet characteristics including vibrations, structural accelerations, wing bending, and wing pressure variations in the .8 to 1.1-Mach speed range.

E. E. Whigham, principal engineer for the test program, said results will be incorporated into a larger Air Force study on maneuvering characteristics of several different aircraft configurations.

Sam Shannon is project manager and Ed Emerson will be primary test pilot. Test instrumentation was installed by Dept. 544-4 personnel under Lyle McClain.

Inventory Society Elects Convair Man

A. L. Ratz, Convair Dept. 840-0 material control group supervisor, has been elected District A executive vice-president of the American Production and Inventory Control Society.

The district includes all states west of the Mississippi as well as Indiana, Illinois, Michigan, and Wisconsin and all foreign chapters associated with APICS, except Canada.

SAFETY CONSCIOUS—Chloe M. Gilliland, Dept. 584-0 secretary, receives safety award from John M. Wild, director-engineering technologies. It was her seventh award for approved safety suggestions in last 12 months. John Hopman, left, Convair chief safety engineer, presents lighter as added gift "in appreciation for your efforts in the cause of safety at Convair." Awards in background are all Mrs. Gilliland's.

Five UC Courses Begin In-Plant

Five winter quarter University of California Extension courses are being held at Convair division's Lindbergh Field (LF) and Kearny Mesa (KM) plants beginning this week.

Two sessions of "Introduction to information processing and computer programming" are scheduled. John Hicks is instructor for one session 5 to 8 p.m. Wednesdays through March 25 in the LF Bldg. 14 auditorium. Fred Schwend teaches the other 5 to 8 p.m. Thursdays at KM in Bldg. 17, Rm. 7.

"Computer programming" is being offered 5 to 8 p.m. Tuesdays through March 24 at KM Bldg. 17, Rm. 7, with Schwend instructing.

"Leadership principles and practice," with David Chigos as instructor, will meet 5 to 9 p.m. Fridays and 8 a.m. to 5 p.m. Saturdays through Jan. 24 in the Bldg. 2 presentation room at KM.

"Methods and procedures for information systems," with Charles Twohey instructing, is meeting 5 to 8 p.m. Tuesdays through March 24 at KM in Bldg. 26 conference room 2.

Additional information is available at educational services offices.

Registration Begins For 21 Club Courses

Pre-registration for the spring session of Convair Management Club's management and professional development courses is under way.

The 21 courses offered will begin this month. Individual flyers announcing the time, place, and instructor for the courses will be distributed later.

Courses are:

Challenges of Management; Principles of Managing (audio visual series); Principles of Managing (workshop); National Managerial Test; Presentation Workshop; Speechcraft.

Effective Communication; Motivation and Productivity; Functional Planning and Coordination; Managerial Leadership; Tomorrow's Technology; Management Speaks.

Spotlights; Law for the Layman; You and Your Money; Introduction to Scientific Computer Systems and Information Storage and Retrieval; Patents, Trademarks and Copyrights Seminar; Fast Reading for Success; Offensive Driving; Seven Most Common Errors in Investing.

Miniature Railroad Selects '70 'Wheels'

Keith Bennett of Convair's Dept. 761-0 has been elected president of the CRA Miniature Railroad Club, which operates the Kearny Mesa and Pacific Railroad in Missile Park, for 1970.

G. G. Shipman, a retired Convair employe, is vice president. Ed Mehrlust of Electronics-SD is secretary-treasurer.

Work sessions are held each Saturday and Sunday at the railroad "yard" and club members currently are building two new "cattle cars" for little tots among its riders.

The Kearny Mesa and Pacific locomotive has been equipped with a new diesel engine since last summer and carried a record 3,600 passengers for one day Sept. 7, when Stromberg DatagraphiX had an annual picnic scheduled in the park.

BRIGHT LIGHT — Crystal Richards, Dept. 101-6, displays roses she received as unexpected Christmas gift from anonymous admirers. Card merely read "for bringing a little light" into KM cafeteria. It was signed "Cafeteria Girl Watchers Society."

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Jan. 13. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB — South Bay 25-mile ride, Jan. 10, meet Security Pacific Bank, Imperial Beach, 9 a.m.

BONAIR FLYERS—Meeting, Jan. 8, Aerospace Museum, 7:30 p.m.

BRIDGE — Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB — Meeting, Jan. 18, Photo Arts Bldg., Balboa Park.

CERAMICS — Meet Tuesdays and Thursdays, 9 a.m.-noon and 7-10 p.m.

CHORUS — Rehearsals Mondays, 7:30 p.m.

COINEERS—Meeting Jan. 12, 8 p.m.

COUNTRY AND WESTERN MUSIC—Meet each Thursday, 7:30 p.m. CRA Missile Park picnic shelter.

DELTA DIVERS — Meeting, 7:30 p.m., Jan. 14.

FENCING — Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB — Potluck, 6:30 p.m., meeting 7:30 p.m., Jan. 20, Gillespie Field Clubhouse.

GARDEN CLUB — Meeting Jan. 7, 7:30 p.m., Floral Association Bldg., Balboa Park.

HEALTH CLUB — Open 9:30 a.m. to 10 p.m., Monday through Thursday; 9:30 a.m. to 9 p.m., Fridays; 10 a.m. to 5 p.m., Saturdays; "Women Only" weekdays, 9:30 a.m. to 11 a.m.

HI-FI MUSIC — Meeting 7:30 p.m., Jan. 13.

ICE SKATING — GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1.00 (includes skates).

JUNIOR SCIENCE — Workshop, Jan. 16, 7:30 p.m.

MINIATURE RAILROAD — Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD — Work sessions each Tuesday, 7 p.m., CRA Missile Park.

PISTOL CLUB — Shoot Jan. 11, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB — Meeting Jan. 15, 7:30 p.m.

RIDING CLUB — Meeting Jan. 14, 7:30 p.m.

RIFLE CLUB — Senior shoot Jan. 14, 7 p.m.; junior shoot, Jan. 17, 9 a.m.; Gillespie Field Range.

ROCKHOUNDS — Meeting Jan. 14, 7:30 p.m.

SCULPTURE — Workshop sessions Mondays, 7:30-10:30 p.m.

SKI CLUB — Meeting Jan. 6, 8 p.m., South Bay Club.

SPORTS CAR CLUB — Meeting Jan. 14, 7:30 p.m., CRA Missile Park picnic shelter.

SQUARE DANCE — Dance Thursdays, 8-10 p.m.

STAMP CLUB — Meeting Jan. 8, 7 p.m.

TABLE TENNIS — Friday night league, 7:30 p.m. Play Saturdays, 10 a.m. to 4 p.m.

TOASTMASTERS — Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamic Toastmasters No. 457, Thursdays, 5:30 p.m.

TRAILERS — Meet Jan. 6, 7:30 p.m.

TROPICAL FISH — Meeting Jan. 19, 7:30 p.m.

WOMENS GOLF — Los Penasquitos tournament, Jan. 10.

Hurry for Discount On Gulls Tickets

Convair Management Club is offering discount tickets for the Jan. 11 San Diego Gulls vs. Vancouver Canucks game. Sales deadline is tomorrow (Jan. 8).

Tickets, available to General Dynamics employes and their families, are $2.25 and $2.75, a 75-cent savings.

As an added attraction, the tickets will also be good for the 5 p.m. game between the San Diego Midgets Travelling Team (ages 15 and 16) and the Pasadena Midgets.

Ticket locations are Management Club Office, Bldg. 2, KM, employe benefits, Bldg. 16 and vendors' lobby at LF; employe benefits, Bldg. 4 at AF Plant 19.

Ticket sales end at noon, Jan. 8. For information call N. B. Powell Jr., ext. 1024 KM.

Europe Tours To Be Outlined

The second meeting for the CRA Europe charter tour will be at 7:30 p.m. Thursday, Jan. 22 at CRA Clubhouse.

Three tour programs will be discussed in detail and travel brochures distributed. Tours leave San Diego May 3.

Cost of the "grand tour" is $695, the Scandinavian air/sea tour is $875 and the Spain tour $845. All programs include jet travel from San Diego to Copenhagen and return from London.

Tour program includes hotels, land transportation, transfers, baggage handling and tips, sightseeing and guide service. Tours are escorted from arrival to departure. Approximately two-thirds of the meals are included.

For reservations, call 1111 KM. Air transportation only is available for $335.

Computer Program Deadline Announced

Jan. 23 is deadline for interested Convair division employes to submit applications for a company-sponsored, 12-week evening training program in business computer programming.

All applicants will be given aptitude tests and must have already completed at least one course in the data processing field. Those completing the training will be considered for openings as flat-salaried business computer programmers as they occur.

Application forms are available at educational services offices. Phone Wayne Turner, ext. 2564 LF; Bruce Bolen, ext. 2474 LF (AF Plant 19) or Jim Watt, ext. 1329 KM.

The forms are to be mailed to G. O. Withem, chief of data systems, mail zone 170-10, for screening by business data systems supervision.

Worthington, O'Brien Bag Christmas Birds

Handgun marksmen Bill Worthington and Don O'Brien fired the Hi-Lo scores on a special "luck target" at the CRA Pistol Club's Dec. 14 matches to bag the year's Christmas turkeys.

Results of regular competition were: Masters — O'Brien, 289-7x; Roland Schneider, 285-8x; Expert — Charles Kropp, 278-6x; G. H. Lehrer, 272; Sharpshooter — Veronica O'Brien, 226; James Thomas, 213.

Club's next match will be Jan. 11 at 9:15 a.m. at Police Pistol Range.

Blatt Beats Craig For Holiday Ham

Mort Blatt defeated Les Craig 21-18, 16-21, and 21-12 in the CRA Christmas Table Tennis Tournament to take home the holiday ham.

In the losers division, Art Jenkins was awarded a ham for beating Carl Thornton 21-12 and 21-8.

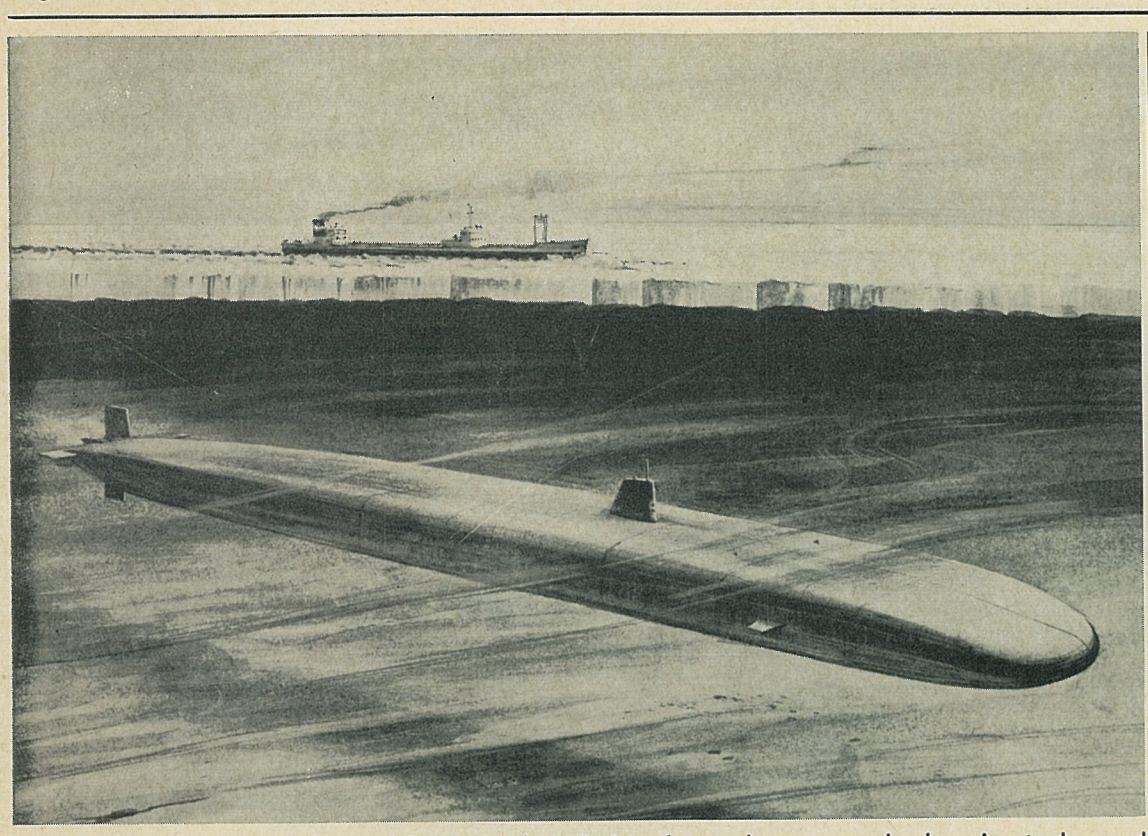
A table tennis league is being planned by CRA. The league will be composed of four man teams and round robin play will be on Friday nights.

For information, call Pete Beyrer, ext. 1111 KM.

Flyers Club Meets Thurs. at Museum

The Bonair Flyers Club will meet at 7:30 p.m. Thursday, Jan. 8, at the Aerospace Museum, Balboa Park, to elect officers, tour the museum and view three films.

The club will offer a repeat of its private pilot ground school course beginning Feb. 16. Preregistration ends Feb. 2. For information call George Hazelrigg, ext. 3368 KM, Red Taylor, ext. 3393 KM, Steve Adams, ext. 1223 LF or Jim Moody, ext. 1965 LF.



SUBMARINE TANKER—General Dynamics has designed a nuclear-powered submarine tanker and proposed construction to several oil companies. Initial design calls for vessel 900 feet long — largest submarine ever built. Displacing over quarter million tons when fully loaded, submarine would traverse Northwest Passage or Arctic Ocean under the ice, carrying as much as 170,000 tons of Alaskan crude oil from North Slope to East Coast of U. S.

Air Crews Check Out In F-111 Escape Units

Air crews are learning F-111 escape techniques in specially-built "egress-procedure trainers."

Two FB-111A trainer units are currently in operation — one at Carswell AFB, Texas, the other at Pease AFB, N. H. A third trainer, an F-111D version, will be delivered to Tactical Air Command later.

The trainer consists of a partially operational, regulation-size escape module, which is attached to an instructor's console.

As crewmen go through each of the escape procedures — pre-ejection, canopy operation, chute deployment, etc. — a light appears on the instructor's console.

"This way," said E. P. Vonkohn, Dept. 282-3, "the instructor can make certain crewmen are carrying out each step."

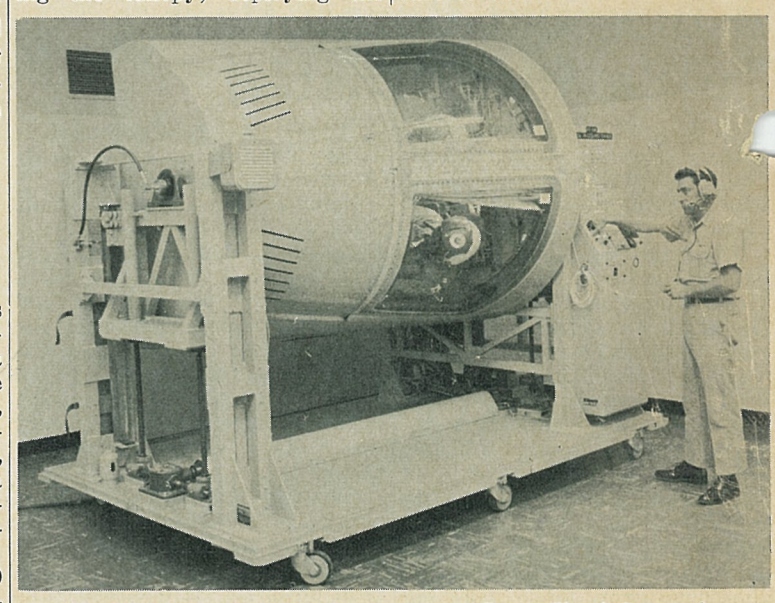
Some of the other emergency steps simulated include: operating the canopy; deploying the chute; releasing emergency cabin pressure, oxygen and severance and flotation gear; operating the bilge pump and inertial-reel control; using chaff dispenser and auxiliary flotation; and gaining access to survival equipment."

A timing device on the instructor's control panel "times" various steps taken by the crewmen.

An intercom system provides communication between crew members and instructors during the training exercise. However, crewmen cannot communicate with each other after "ejection."

Fort Worth division designed the trainers, which were manufactured by Stromberg-Carlson's Ardmore facility.

"Air Force F-111 crews have to go through training every year," Vonkohn said, "so that the procedure becomes second nature to them."



SIDE SADDLE—Maj. Ted Bozzetti and Capt. Chuck Barr rehearse F-111 escape techniques in Fort Worth division furnished egress-procedures trainer with 340th Bomb Group at Carswell AFB, Texas. Capt. Ray Fink controls operation from instructor's console.

Public Affairs Director Named

Bob J. Robison, a retired Navy captain and former Navy legislative liaison officer to the U. S. Senate and public relations officer for the Navy Department, has been named director of public affairs for the Washington Office of General Dynamics.

E. J. LeFevre, vice president and general manager of the Corporation's field sales operations, said Robison will coordinate press, public and Congressional relations activities for General Dynamics in the Washington, D.C. area.

Robison for the past two years has been deputy director of corporate planning for International Telephone and Telegraph in Washington.

During his 26-year Navy career, he also served as director of fleet operations for the Atlantic Fleet, commanding officer of the fleet oiler USS Severen, assistant operations and planning officer of the Sixth Fleet in the Mediterranean, and executive officer of the aircraft carrier Independence.

A qualified jet pilot, he also had served as commanding officer of an A-4 Skyhawk squadron and held several other assignments as a naval aviator.

Robison is a graduate of George Washington University and attended the Advanced Management Program at Harvard University, the Naval War College, and the Naval General Line School.

New Dynamics Vp Briefed at Convair

Dr. George Mueller, former associate NASA administrator and now a General Dynamics vice president, visited Convair last month for a review of current and future programs.

He was welcomed by Jack Bowers, Convair president, and Lyman C. Josephs, general manager, and briefed on launch vehicle, space shuttle, space orbital, advanced aircraft, and information programs.

Giant Sub Proposed For Transporting Oil

General Dynamics has made proposals to five oil companies to build 170,000-ton nuclear-powered submarine tankers to move Alaskan oil under the ice to an ice-free North Atlantic port, where the oil would be transferred to conventional tankers for delivery to U.S. East Coast destinations.

The submarines could traverse the Northwest Passage or move under the ice of the Arctic Ocean to the open sea. They would be loaded either on the surface or while submerged off Alaska's Prudhoe Bay.

Roger Lewis, General Dynamics president, said that the proposals were made after extensive technical feasibility and cost evaluation studies showed the submarine to be an entirely practical and economically attractive means for moving arctic oil.

"Beyond the inherent reliability of nuclear power," Lewis said, "the arctic submarine, operating submerged, enjoys a steady 28-degree temperature and protection from ice, wind, waves and storms. In this constant and protected environment, the submarine is exposed to a minimum of environmental hazard. Navigation and schedule adherence can be precise."

Capable of carrying 170,000 tons of oil in its rectangular-shaped hull, the submarine would be 900 feet long, with a beam of 140 feet and a hull depth of 85 feet. Its twin screws would give it a speed of 18 knots. General Dynamics plans to build the ships at its Quincy, Mass., shipyard.

Proposals were submitted to Standard Oil (New Jersey), Atlantic Richfield, Mobil, Standard Oil (Ohio) and Phillips Petroleum.

Lewis said that the General Dynamics proposal to the oil companies includes prices and delivery dates for six ships and provides for a period of cost-shared development during which detailed specifications will be agreed upon and necessary technical proposals made to regulatory agencies.

"Our work shows the submarine tanker will achieve substantially lower costs for moving oil to the U.S. East Coast than those attributed to projected pipeline systems," Lewis said. "Comparison with possible icebreaking surface tanker costs is difficult," Lewis added, "because the oil moving costs of a surface ship system are dependent upon the ability of ships of reasonable cost to operate through the ice on schedule on a year-round basis at economic speeds."

"Several aspects of the submarine's inherent flexibility are of special interest," Lewis said. "Capable of being loaded either on the surface or while submerged, it can adjust its route as required to service possible new arctic oil discoveries and may be especially advantageous for moving oil from the Arctic Islands, should oil be found there."

In addition to serving the U.S. and Canadian East Coasts, the submarine could operate under the ice of the Arctic Ocean to serve Europe, Lewis said.

"Reduced transportation costs are possible with bigger submarine tankers," Lewis said, "and our design provides that the main presssure hull and power plant of the 170,000-ton ship could be employed for ships up to 300,000 tons as larger shipbuilding facilities become available. The present ship has been sized to existing facilities," the General Dynamics executive concluded.

KLM's DC-10s Will Be Named for Composers

KLM Royal Dutch Airlines has announced that its McDonnell Douglas DC-10 Series 30 tri-jetliners, with Convair division-built wide-bodied fuselages, will be named after famous composers.

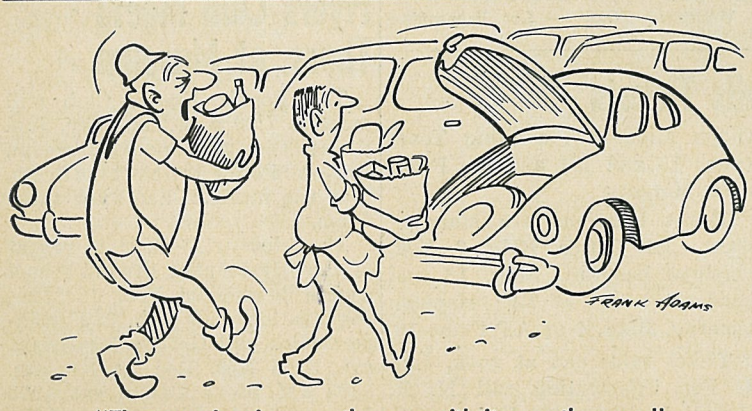
The first will be named "Johann Sebastian Bach." Others will be christened "Ludwig van Beethoven," "Frederic Chopin," "Maurice Ravel," "Wolfgang Amadeus Mozart," and "Giuseppe Verdi."

KLM is one of four European carriers in the KSSU group that announced orders last year for 14 DC-10s with options for 22 others.

FICA Deduction in '70 Continues at 4.8 Pct.

General Dynamics personnel will pay Federal Social Security taxes (FICA) at the rate of 4.8 per cent of $7,800 in 1970.

The percentage and maximum FICA deduction of $374.40 in 1970 is identical to the 1969 rates.



"That one is mine . . . the one with its mouth open."

Second Radome Testing System Demonstrated and Delivered

Fort Worth division has successfully demonstrated and delivered the second F-111 radome electrical test system to Sacramento Air Material Area (SMAMA).

The system is designed to test and evaluate all configurations of the F-111 radome. It evaluates for transmission efficiency and beam deflections associated with characteristics of all attack-radar systems and the terrain-following radar systems.

Also provided is the capability for radiation pattern measurements.

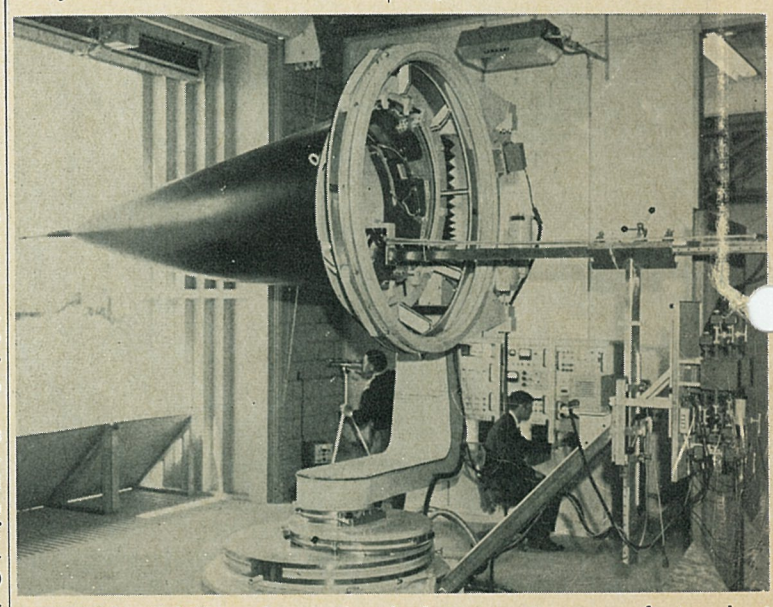
Basically, the system consists of a radome and antenna positioner, electronics consoles, and test antennae installed in a primary tower facility 25 feet high. A secondary 25-foot tower 334 feet down range is equipped with a two-axis null-seeker/beam-seeker system.

Delivery of the system provides SMAMA with a capability for repairing all F-111 radomes and for re-testing to an accuracy equivalent to that used during manufacture: less than one inch in 334 feet.

The division previously delivered the first radome electrical test system, which was configured to test F-111A radomes only. This system is being modified so that it can be used in testing all F-111 radomes.

A third system is being installed on the antenna test range at Fort Worth.

Engineering group 062-3600 (AGE maintenance planning and support group) designed, installed and integrated the test system with range facilities at McClellan AFB, with assistance from major subcontractors, Brunswick Corp. and Carco Electronics.



TESTER—F-111 radome electrical test system manufactured at Fort Worth division was installed recently for SMAMA. Checking out system are J. S. Meek, left, Brunswick Corp., and R. E. Kimbrough, aerosystems engineer.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

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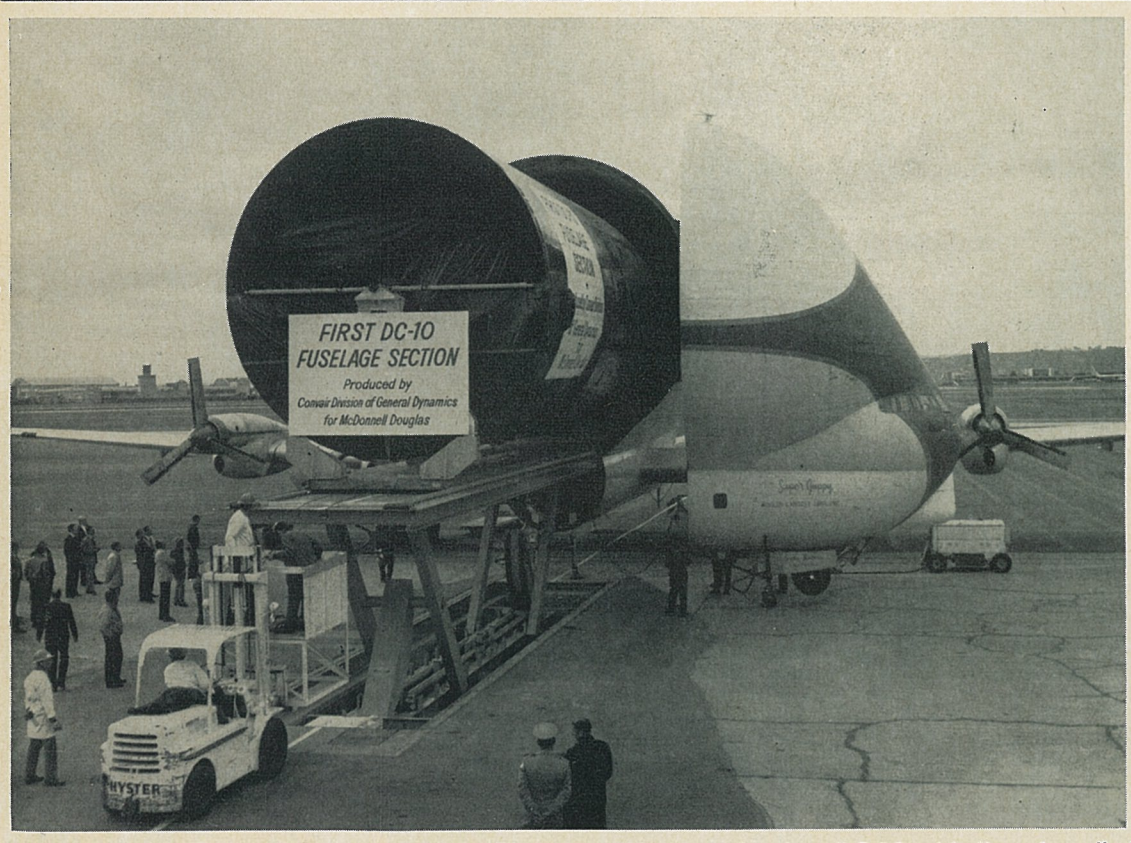


SENDOFF—First of three fuselage "barrel" section shipments for first DC-10 tri-jetliner is pulled into Aero Spacelines' Super Guppy transport plane for delivery to Douglas Aircraft Co. plant in Long Beach. Twenty-ton electro-hydraulic hoist in foreground was used to lift fuselage section 11 feet to cargo deck level.

Sustained Quality Stressed as Bowers Lists '70 Objectives

Convair President Jack L. Bowers unveiled the 1970 Convair division objectives at his quarterly supervisors meeting Thursday, Jan. 15. He stressed Convair Craftsmanship through personal awareness and personal concern.

Bowers told supervisors that Convair Craftsmanship is the key to winning new business and keeping old customers satisfied.

Bowers said that a plan for improving Convair personnel through refresher training and quality motivation sessions, certification of skill proficiency, identification of the worker through his work, and recognition for achievement, is being worked out and will be implemented in the near future.

Improving the Craftsmanship program, Bowers added, would enable the division to win a second straight Air Force Sustained Craftsmanship Performance Award, a major division objective.

Other division objectives are:

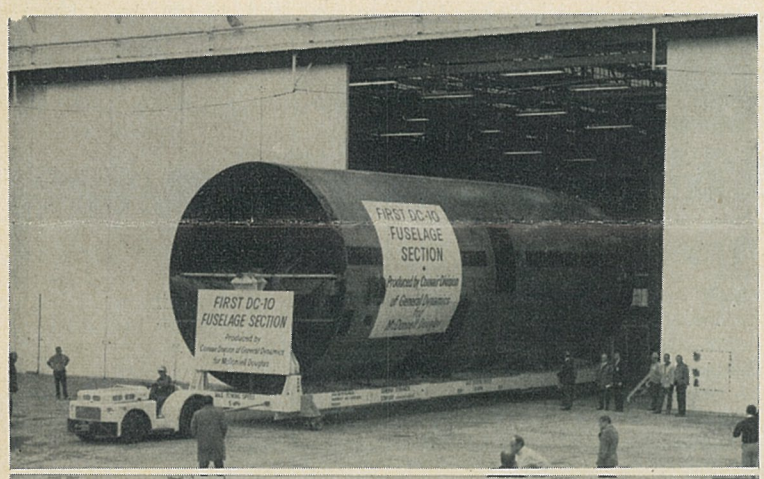
Achieve 100 per cent success in delivery, launch, and flight performance of Atlas and Centaur vehicles; deliver 13 complete DC-10 fuselages; maintain progress to schedule on Advanced Centaur development; lower the serious accident rate by 25 per cent, returning to the 1968 level; exceed budgeted profit and return on investment; increase employe participation in cost reduction programs by 20 per cent; expand business activity for Atlas and Centaur; develop further improvement programs for F-102 and F-106; establish Convair as a leading competitor for new space programs, earth to orbit and orbit to orbit shuttles; win a military study program, such as A-X; improve position as a prime contender for future VSTOL/VTOL programs; establish increasing technology base for other advanced programs.

In discussing last year's division objectives, Bowers said the overall performance was good. Some objectives were achieved in an outstanding manner. The division secured new missions for Atlas-Centaur, won the Air Force Sustained Performance Craftsmanship Award, exceeded budgeted profit and return on investment.

At the same time Bowers expressed concern over the division safety record, an objective Convair did not come close to meeting. The division also did not meet original delivery schedules on DC-10.

Bowers said the biggest disappointment of last year was the loss of the S3A contract but that the division learned from this and the experience would be helpful in other programs.

At the meeting supervisors were given calendars which emphasized Craftsmanship and contained copies of 12 original paintings telling of Convair programs of the past and present.



ROLLOUT—C/D section for first DC-10 — 55 feet long, 20 feet in diameter, and weighing 15,500 pounds — rolls out of Bldg. 3 at Convair division's Lindbergh Field plant (top photo). Signing acceptance document for section in lower photo, from left, are (seated) Mike Brega, FAA supervising inspector; Roger Cyr, Douglas Aircraft Co. chief resident representative-quality assurance; Roy H. Gilliland, Convair manager of reliability control-Lindbergh Field; S. H. "Penny" Bellue, Douglas manager-DC-10 fuselage; (standing) J. S. Boaz, Convair contracts administrator; and Frank S. Chambers, Convair manager of contracts.

First DC-10 Section Delivered, 'Good Fit'

First forward fuselage section for the first DC-10 wide-bodied tri-jetliner was completed Jan. 9 at Convair division's Lindbergh Field plant and flown to the Douglas Aircraft Co. plant in Long Beach aboard Aero Spacelines' whale-size Super Guppy.

The delivered section, designated C/D for two sections previously mated at Convair, was 55 feet long, 20 feet in diameter, and weighed 15,500 pounds.

Convair has a long-term contract with McDonnell Douglas for fabrication of five sections (all but the nose and tail) of the 179-foot fuselage for long-range transports and convertible freighters in the DC-10 series.

Other Convair-built sections for the first test aircraft's fuselage, a 33-foot center section and a 39-foot aft section, will be delivered next month.

Jack Hurt, Convair DC-10 program manager, said delivery of the C/D section a week ahead of a previously predicted date was made possible by production personnel accomplishing more than two weeks' work in one week.

Last assembly operation at Convair, placement of a galley floor section around the escape chute, was completed at 4:30 a.m. the day of delivery.

Ends of the C/D section were covered because of forecast rain and the section was winched into the Super Guppy, billed as the world's largest aircraft, after being lifted to cargo-deck level on a special hoist fabricated to Convair specifications in West Germany. The Super Guppy left LF at 1:10 p.m. and rain was falling in Long Beach as the C/D section was moved into the DC-10 final assembly building.

Hurt said the C/D section was moved into position adjacent to the nose section for the first DC-10 the following morning and that the two sections had been riveted together by Jan. 13.

"Douglas officials were pleased with the quality, accuracy, and completeness of the section," he said. "It was an excellent match with the nose section."

Convair personnel at Long Beach for ceremonies marking arrival of the section and to assist with unloading operations included Jack Bowers, president; Lyman Josephs, general manager; W. L. Van Horn, director of operations; Hurt; Frank Chambers, manager of contracts; John Ruzich, general supervisor of shipping and traffic; J. J. Jansson, traffic supervisor; and Jack Ortman, transportation foreman.

J. N. McPheeters, chief of stores and traffic, said extreme caution was taken in loading and transportation of the C/D section. "Everything worked according to plan, although we were a couple of hours behind schedule for completion of loading," he said.

"We proved out our whole moving concept," Ruzich commented. "This was the largest of the three

(Continued on Page 2)

Management Club Drawing Will Include Round-Trip Fares to San Francisco

Convair Management Club will hold its annual Sports Night begining at 6:30 p.m. Friday, Jan. 23, at Balboa Park Club.

The theme will be "The Lighter Side of Sports." Speakers will include Dr. Ken Karr from San Diego State College; Eddie Leishman from the Padres; Emil Karas from the Chargers; Max McNab from the Gulls; and Pete Newell from the Rockets.

There will be a drawing for two round-trips to San Francisco. Winners must be present.

Cost for the event is $2 which includes beverage and pizza. Tickets are on sale from all Management Club Boosters.

Electronics-SD Assumes Display Systems Task

Electronics-SD will produce and market three major display systems formerly within the Stromberg DatagraphiX product line. Seventeen key program personnel also have transferred to Electronics-SD to handle engineering and marketing of the systems.

Now assigned to Electronics-SD are the 2220 Large Screen Display, the 1072 Interactive Display System, and future A-NEW airborne display programs. Production under the current A-NEW contract for Navy P-3C Orion aircraft displays (AN/ASA-70) continues at DatagraphiX.

R. E. Thoman

J. H. Redman

James H. Redman has transferred to Electronics-SD as manager of display systems - marketing, with Richard A. Glaeser assisting with marketing activities.

Richard E. Thoman is manager of display systems - engineering. Engineering personnel under his direction are A. F. Casey, L. R. Crump, G. E. Curtis, R. E. Handy, R. C. Loew, R. D. Smith, J. T. Stebbins, Jack Strozyk, K. W. Swant, T. W. Summerville, R. A. Wileman, and P. O. Wilson. Secretaries transferring with the group Dec. 26 were Barbara Grigsby and Mary Martin.

E. J. Illes, Electronics-SD marketing manager, said the three systems transferred all utilize the General Dynamics-developed CHARACTRON® shaped-beam tubes and will complement and increase Electronics-SD systems capabilities.

"Our present instrumentation, tracking, and data systems require visual read-out displays," Illes said. "Addition of leaders in this highly complex engineering field to the

(Continued on Page 2)

First DC-10 Section Delivered, 'Good Fit'

(Continued from Page 1)

sections, so we know we can ship the others without difficulty."

The C/D section is composed of 20 large panels, 10 fabricated by Convair and 10 under subcontract by Aerfer Industrie Aerospaziali Meridionali in Naples, Italy.

Delivery of the section was a key milestone in a series of events that began with award of the contract to Convair Aug. 8, 1968, followed by award of the Aerfer subcontract two months later.

First engineering drawings came off-board at Convair and first detail plans and shop orders were released in October, 1968.

First detail parts were completed in April, 1969. First assembly fixtures were completed May 8, rolling and stretching of first production skins was completed by vendor firms June 18, and last of tooling and basic fixtures at Convair was completed June 28.

Subassembly operations on the C/D section began July 15, first panels from Aerfer were received Aug. 4, and a second shift in the assembly area was initiated Aug. 18. Quarter-panel assembly began Sept. 19.

Assembly of panels and structural components on major assembly fixtures in Bldg. 3 at LF was accomplished with the sections in an "upside down" position until time for placement of the top ⅓-panel on the complete-barrel fixture, last fixture on the assembly line.

Ten airlines in the U.S. and Europe have placed initial orders and options for 201 DC-10s.

Electronics Office Provides Services

Electronics-San Diego maintains its own employe benefits, CRA service center and discount ticket outlet at Lindbergh Field, near the Bldg. 51 vendor lobby.

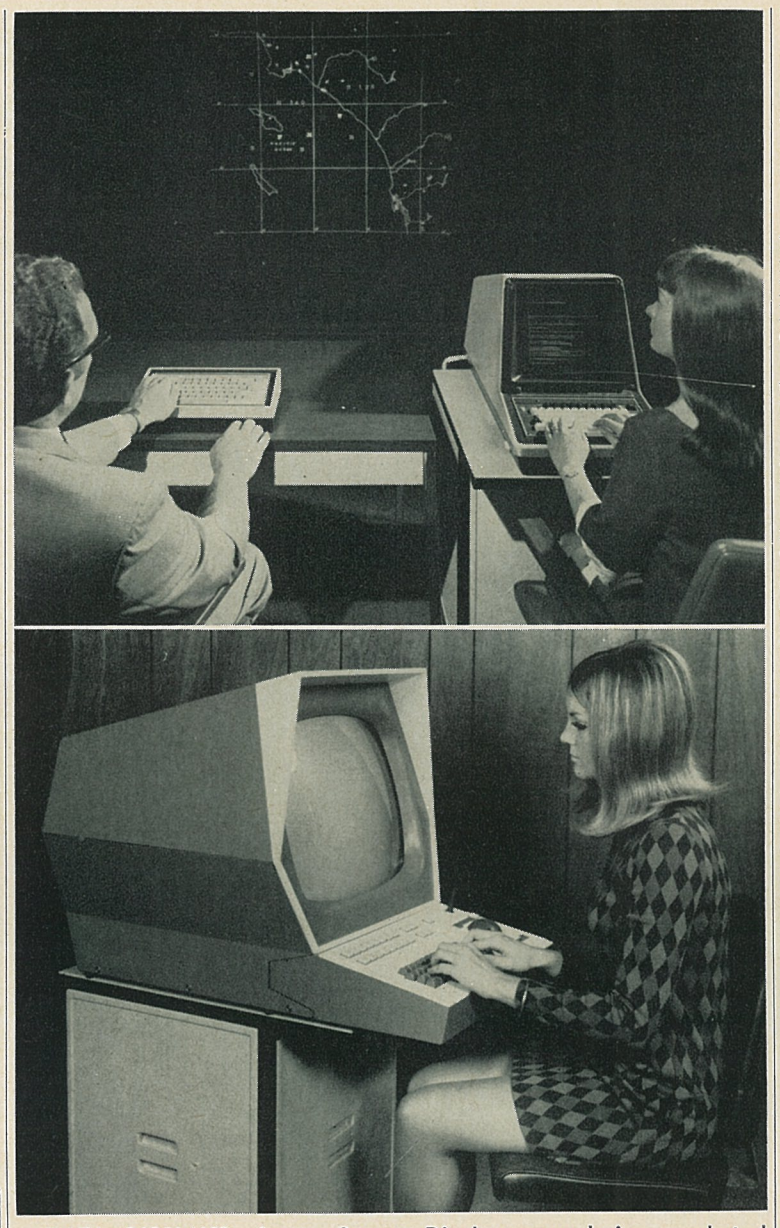
Millie Buffat, industrial relations insurance clerk who "mans" the outlet, says her CRA services and tickets are also available to Convair division employes but that employe benefits services are limited to Electronics-SD personnel. Convair's employe benefits offices for LF are in Bldg. 16.

All discount tickets and CRA items and services currently in effect are available from the Electronics-SD outlet.

Mgt. Club Planning Disneyland Party

Convair Management Club will sponsor another family party at Disneyland April 11.

The planning committee is headed by Don Evanson and Sam Catalano.



DATA DISPLAYS—Large Screen Display, now being marketed by Electronics-SD, is being used (top photo) in Southern California air traffic control simulation. Ron Handy operated keyboard for unit as Mary Martin uses 1110 display console. In lower photo, Interactive Display unit than can generate both pictorial and tabular information is operated by secretary Barbara Grigsby. System permits "interaction" between man and computer.

Electronics-SD Assumes Display Systems Task

(Continued from Page 1)

Electronics-SD staff also enhances our future product development and sales potential."

The 2220 Large Screen Display uses a powerful new CHARACTRON® tube, 100 times brighter than other cathode-ray tubes, for display of real time computer data on a large screen through use of reflective optics.

Changes in displayed data and updating of information can be made instantly through use of a key set or an on-line computer system.

Redman said the new tube developed for the system is a significant break-through in large-screen projection technology. "No other large-screen projection system can provide the real-time capability of the 2220 with the same reliability and cost," he said.

A public utility company is considering use of the projection system for plotting of electrical outages in its trunk lines, and aircraft and vehicle traffic control are among many potential uses. The 2220 can be used in large group meetings for computer information retrieval and immediate projection.

The 1072 Interactive Display System can be used by engineers, programmers, and designers in creating, viewing, and modifying computer graphics for problems as simple as drawing of a schematic or as involved as design of complex electronic circuitry or of a building or bridge.

Thoman said computer-output pictorial or tabular information is displayed on the 1072's 21-inch screen and can be modified through use of a light gun, electric pencil, or other data-entry technique until the display shows the result desired.

"The Interactive Display System provides real 'give-and-take' between man and computer as problems and designs are worked out," Thoman said. "Pictorial images created can be rotated to provide three-dimensional views. Applications for use of this new technology are virtually unlimited."

The 1072 can be used with a time-shared host computer or can be used with a Product Control Unit for automated drafting and similar tasks.

A comprehensive set of graphic subroutines, provided with the system, is used with the host computer to create a graphic data file which the Product Control Unit software processes for photographic display.

Redman said future airborne, mobile, and fixed-base display systems based on the military A-NEW avionics hardware will use a variety of special electronics and CHARACTRON® tubes for simultaneous presentation of television, computer, and sensor information. Tracking of moving "targets" and other data can be superimposed over maps or other static displays.

Electronics-SD also will produce a wide range of supporting electronics, including ground support equipment and operational control centers, for next-generation military systems based on the A-NEW concept.

New Tax Withholding Rate Now Effective

The new 5 per cent surcharge rate on individual income tax withholding is now effective.

The new rate went into effect at Convair the week ending Jan. 11 for hourly employes and the period ending Jan. 18 for salaried employes. The change was reflected in hourly checks received Jan. 16 and will affect salaried checks received Jan. 23.

Some individuals, even with the lower surcharge, will have an increased amount withheld from their checks. According to the Internal Revenue Service, this is because of new calculating methods. The increases occur, according to IRS, in the $5,000 to $7,500 income range, notably married taxpayers with three or more dependents.

Test Facility Activated With Centaur Firing

A hot firing of the Centaur's twin rocket engines initiated a new test facility last month at NASA-Lewis Research Center's Plum Brook Station, Sandusky, Ohio.

The firing marked the first use of the Spacecraft Propulsion Research Facility, known as the B-2 stand, and the beginning of a test program to modernize Centaur.

Events leading up to the hot firing began with a successful "spin up" test to check out instrumentation of the facility, its control center, and Centaur systems. To accomplish the spin up, liquid hydrogen and liquid nitrogen were loaded into propellant tanks of the vehicle, followed by an automatic sequence of events to time of ignition.

After the spin up, the liquid hydrogen and liquid nitrogen were removed from the propellant tanks. The propellant system was then reconfigured to accept liquid oxygen in place of the liquid nitrogen.

For the hot firing, Centaur was mounted vertically, nozzles down, in the test chamber. At ignition, the two RL-10 engines fired downward through a water cooled exhaust diffuser and into a deep spray chamber.

As hot gases entered the chamber they were cooled by water sprayed out at thousands of gallons a second. An altitude exhaust system ejected the resulting steam into the air while water heated by the rocket exhaust was recirculated back to the spray chamber.

The firing was the first of a series of tests designed to improve the Centaur vehicle's pressurization and propellant feed systems.

As now designed, Centaur carries two boost pumps which feed the boiling propellants to the main engines for start up. In the B-2 tests, engineers are looking for a way to eliminate those pumps by internally pressurizing the propellant tanks with new gas systems.

To maintain pressure in the liquid hydrogen tank, hot gaseous hydrogen is bled off from the engine and fed into the tank. Gaseous helium pressurizes the liquid oxygen tank.

According to Dr. Rinaldo Brun, chief of mechanical systems branch of the NASA-Lewis launch vehicles division, the change is possible because of improvements made over the years in the main engines and propellant tank structures.

NASA hopes eliminating the boost pumps will improve reliability of the system and save more than a half-million dollars per vehicle.

Toastmasters Club Officers Installed

New officers of Convair Toastmasters 3745-5 were installed Jan. 7.

They are Robert F. Frederick, Dept. 144-1, president; Floyd R. Glick, Dept. 144-1, educational vice-president; Harvey E. Seibert, Dept. 954-0, administrative vice-president; Tom J. Phillips, Dept. 140-2, secretary; Marvin R. Holmberg, Dept. 140-1, treasurer; Frank Carroll, Dept. 144-4 and William H. Pfender, Dept. 574-1, sergeants-at-arms.

Hal Story, Dept. 921, Electronics-SD, senior lieutenant governor, District 5, was installing officer. Toastmasters meet at 4:30 p.m. Wednesdays at CRA Clubhouse.

Club members recently conducted a speechcraft course in cooperation with the Convair Management Club. Earning certificates were: M. J. Edelstein, Dept. 574-6; G. G. Christ, 763-0; H. D. Moore, 250-0; R. W. Squire, 543-2; C. A. Young, 578-3; E. W. Gross, 572-4; W. H. Pfender, 574-1; E. T. Lipscomb, 541-0; C. L. Baker, 192-0; H. O. Akers, 780-4.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Jan. 16 and Jan. 31.

Thirty-year: Dept. 015, W. E. Hays; 019, D. M. Sullivan; 031, J. W. Burgreen; 027, J. J. Medina; 149, L. P. Birse, W. M. Scott; 202, J. D. Hayman; 401, K. Herrman; 400, R. J. Connell; 420, C. J. Johnson; 543, G. C. King; 563, T. A. Billings, H. F. Von Goodat; 587, L. V. Clements.

Twenty-five-year: Dept. 027, J. P. Kany, T. L. Wright; 113, Margaret R. McNeely; 401, E. F. Arregui.

Twenty-year: Dept. 401, C. Allen, J. R. Parga; 519, M. H. Miller; 597, C. R. Tuttle; 780, Gladys A. Pederson; 835, J. R. Thompson; 958, C. C. Campbell Jr.

Fifteen-year: Dept. 019, Mary E. Jimmerson; 142, L. D. Wagley; 149, A. Galli; 460, G. B. Wright; 518, V. H. Haulk; 519, W. K. Stillman III; 524, Alexina N. Markham; 541, A. Sansone; 545, L. A. Scott; 583, R. J. Bulinski; 732, H. C. Cunningham Jr.; 780, J. R. Medina; H. B. Smith; 952, M. R. Barlow; 962, J. W. Trapp.

Ten-year: Dept. 130, R. P. Schulz; 150, Bernadine M. Mausman; 197, R. V. Marlowe; 400, C. W. Shackelford; 401, J. A. Anton; 511, R. M. Pike; 524, Marie Casterline, Jennie G. Soule; 542, Estelle J. Swank; 543, J. F. Peterson; 731, R. Tattoli; 780, Della E. McGarity; 832, W. A. Row; 840, Beverly A. Lathan; 951, Sarah E. Kelly; 985, S. F. Lopez.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Dec. 31.

Dept. 400, J. M. Abernethy, $257.30; 027, H. W. Arnold, T. T. Maulsby, $29.45 each (joint award); 507, K. R. Bailey, $15; 401, C. M. Bley, $15; 059, O. H. Fritz, $15; 515, A. Hood, $130.30; 401, J. E. Huys, $15; 250, V. H. Marshall, $102.90; 131, J. B. Medina, $15; 015, F. Peppitoni, $137.80.

Employe Suggestion awards approved for the week ending Jan. 9.

Dept. 979, F. J. Adams, G. J. Kadlec, $12.50 each (joint award); 985, W. T. Black, $15; 144, F. J. Bourgeois, $110.90; 015, A. Chavez, $72.90; 460, T. R. Field, $25; 059, O. H. Fritz, $15; 250, B. O. Green, 731, S. L. Jackson, $7.50 each (joint award); 985, J. D. Hamne, $28.40; 059, G. Henderson, $1,082.20; 460, K. D. Ickes, $15; 843, E. M. Jones, $77.30; 027, J. A. Kelly Jr., $80.20.

Dept. 517, B. Kilander, C. E. Mahanay, $106.05 each (joint award); 566, K. R. Lemley, $80; 143, B. A. Martin, E. H. Stevens, $7.50 each (joint award); 533, R. M. McGregor, $15; 832, D. L. Powell, $852.80 (two awards); 454, R. D. Prock, $16.50; 031, A. N. Sandler, $58; 985, E. R. Schwabel, J. D. Hamner, $20 each (joint award); 553, L. R. Simpson, $38; 149, G. H. Townsend, $203.40; 149, H. R. Van Hoose, $15; 131, N. E. Wallace, $75.20.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Retirements

CONVAIR

ANGEVINE—James L., Dept. 832-2. Seniority date Nov. 25, 1958, retired Dec. 31.

BLAKESLEY—William O., Dept. 951-6. Seniority date Nov. 16, 1936, retired Jan. 9.

BOLAND—John W., Dept. 015-0. Seniority date April 20, 1957, retired Dec. 31.

BUELL—Norma C., Dept. 130-2. Seniority date Aug. 1, 1939, retired Jan. 9.

CARTER—Willie A., Dept. 015-0. Seniority date June 12, 1956, retired Dec. 31.

GUSTAFSON—Donrad E., Dept. 400-1. Seniority date Feb. 3, 1969, retired Dec. 31.

HUNTER—Gertrude S., Dept. 515-0. Seniority date June 29, 1943, retired Jan. 9.

LETHBRIDGE—William J., Dept. 170-2. Seniority date Nov. 17, 1953, retired Jan. 9.

LILIO—Mile, Dept. 833-1. Seniority date March 13, 1956, retired Jan. 9.

LAUDENSLAGER—John J., Dept. 057-0. Seniority date Nov. 1, 1951, retired Jan. 5.

LUBO—Frank B., Dept. 543-3. Seniority date July 10, 1940, retired Jan. 7.

McNALLY—Richard P., Dept. 149-7. Seniority date June 17, 1940, retired Dec. 31.

PALUMBO—Dominick E., Dept. 027-0. Seniority date July 13, 1936, retired Jan. 9.

PERSING—Luther M., Dept. 015-0. Seniority date Nov. 23, 1936, retired Dec. 31.

POWER—Clifton W., Dept. 110-1. Seniority date Nov. 10, 1947, retired Dec. 31.

RATZ—John W., Dept. 250-2. Seniority date June 3, 1946, retired Jan. 9.

ROGERS—Rufus L., Dept. 001-0. Seniority date July 22, 1966, retired Dec. 31.

SERAFINE—Sylvester Jr., Dept. 985-3. Seniority date Aug. 31, 1959, retired Oct. 15.

SHARMAN—Ray S., Dept. 401-6. Seniority date June 12, 1940, retired Dec. 31.

STABENAU—Leonard L., Dept. 400-1. Seniority date Nov. 8, 1950, retired Jan. 9.

Stevens—Samuel B. Jr., Dept. 514-0. Seniority date Jan. 11, 1954, retired Jan. 9.

TADDIKEN—Harold H., Dept. 400-6. Seniority date April 9, 1951, retired Dec. 31.

TREMBLE—Lyman L., Dept. 142-1. Seniority date Sept. 26, 1941 retired Jan. 9.

Rider-Driver

CONVAIR

RIDE WANTED—From Imperial Beach to Lindbergh Field Plant. Shift hours from 7 a.m. to 3:30 or 4:30 p.m. Call John Clanton, ext. 1081 LF.

Personals

CONVAIR

The family of Joan and Everett Parsons gratefully acknowledges your kind expression of sympathy.

* * *

We want to express our sincere appreciation to our many Convair friends, particularly those in Dept. 149, for the kind expressions of sympathy received upon the death of our beloved son Thomas.

Mr. & Mrs. E. L. Brown
Dept. 149-9

* * *

A great big thank you to all the wonderful Convair people who made my retirement such a happy one.

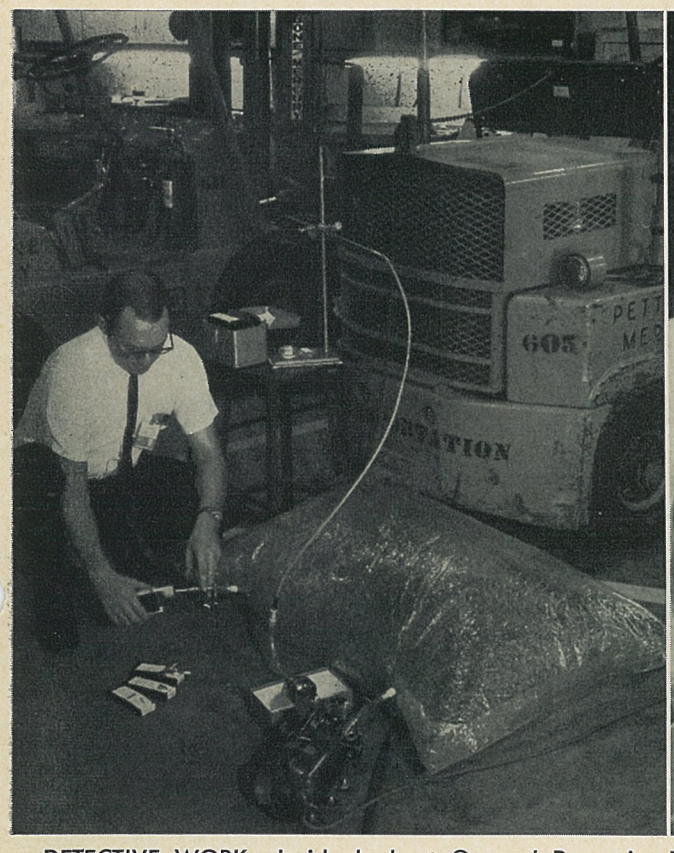
Norma Buell

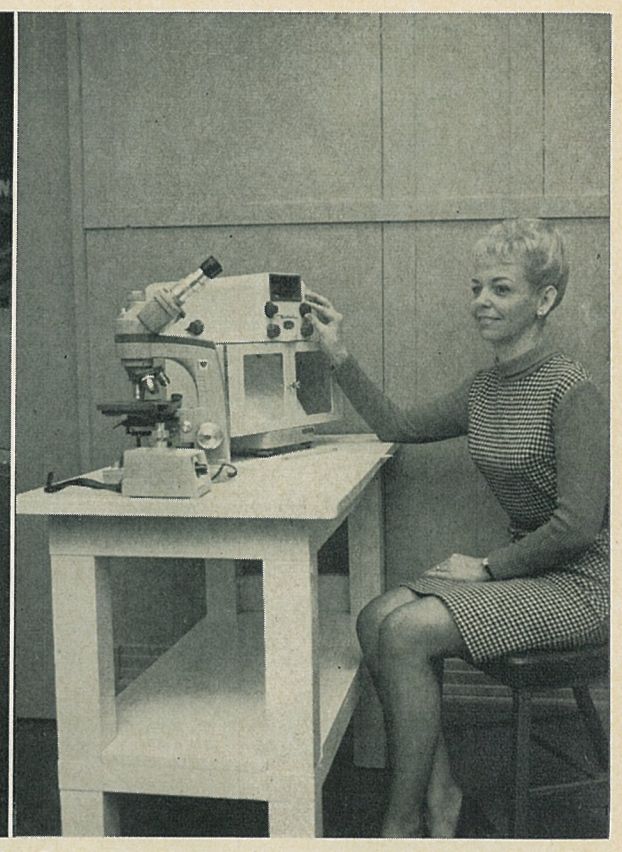
Deaths

CONVAIR

BOYLE—Clarence F., Dept. 420-8, retired Sept. 30, 1966, died Jan. 8. Survived by his wife, Margaret.

RODGERS—A. O., Dept. 834-1, died Dec. 31. Survivors include his wife, Mary Ann, sons John and Jim, a daughter and two grandchildren.





DETECTIVE WORK—Inside look at General Dynamics Bioenvironmental Health Control Center at Fort Worth shows samples of studies. At left, J. S. McKarns, industrial hygienist, uses special equipment to sample exhaust from fork-lift equipped with catalytic muffler-purifier. Center: McKarns checks degreasing fluid air flow into exhaust system of degreasing unit. Right: Portable particle-sizing and counting microscope is demonstrated by Sue Anderson, lab assistant.

Protests on Treatment Of Prisoners Requested

General Dynamics employes have been asked to participate in a letter writing campaign aimed at bringing the pressure of world opinion to bear upon the government of North Viet Nam to secure humane treatment for American servicemen held prisoner.

Sponsored by the Air Force Association and endorsed by the highest levels of U. S. government, the appeal calls for letters to representatives of seven nations believed to have influence with North Viet Nam, and to newspapers in those countries.

In a letter to George D. Hardy, AF Association president, President Nixon wrote:

"One of my gravest concerns is the treatment of American prisoners of war in Viet Nam. Their welfare and speedy release are high priority matters for this Administration . . . Your efforts in behalf of these fellow citizens . . . merit the gratitude of all of your fellow citizens."

Thus far, North Viet Nam has ignored the Geneva Conventions of 1957 which promised to identify prisoners, release the sick and wounded, and allow proper flow of letters and packages. Letter writers were advised to be brief and use simple language, not abusive but stating concern for the well being of U. S. prisoners.

The following are believed in a position to be influential:

CAMBODIA — Mr. Thay Sok, Charge d'Affaires, Embassy of Cambodia, 4500 Sixteenth St., N. W., Washington, D. C. 20011; Agence Khmere Presse, Ministry of Information, Phnom Penh, Cambodia; La Depeche Du Cambodge, Phnom Penh, Cambodia. Postage for the latter is 25 cents per ½ ounce air mail.

FRANCE — His Excellency, Charles Lucent, Embassy of France, 2535 Belmont Road, N. W., Washington, D. C. 20008; Le Monde, Paris 8, France; LeFigaro, Paris 8, France. Postage for the latter is 20 cents per ½ ounce air mail.

INDIA — His Excellency, Nawab Ali Yavar Jung, Embassy of India, 2107 Massachusetts Ave., N. W., Washington, D. C. 20008; Times of India, New Delhi 1, India; Hindu, Madras 2, India. Postage for the latter is 25 cents per ½ ounce air mail.

POLAND — His Excellency, Jerzy Michalowski, Embassy of Polish People's Republic, 2640 Sixteenth Street, N. W., Washington, D. C. 20009; Trybuna Ludu, Warsaw, Poland; Zycie Warszawy, Warsaw, Poland. Postage for the latter is 20 cents per ½ ounce air mail.

ROMANIA — His Excellency, Corneliu Bogdan, Embassy of Socialist Republic of Romania, 1607 Twenty-third St., N. W., Washington, D. C. 20008; Scinteia, Ducharest, Romania; Romania Libera, Bucharest, Romania. Postage for the latter is 20 cents per ½ ounce air mail.

SWEDEN — His Excellency, Hubert de Besche, Embassy of Sweden, 2249 R St., N. W., Washington, D. C. 20008; Dagens Nyheter, Stockholm, Sweden; Svenska Dagbladet, Stockholm, Sweden. Postage for the latter is 20 cents per ½ ounce air mail.

USSR — His Excellency, Anatoliy F. Dobrynin, Embassy of the USSR, 1125 Sixteenth St., N. W., Washington, D. C. 20036; Pravda, Moscow A-47, U.S.S.R.; Izvestia, Moscow A-47, U.S.S.R. Postage for the latter is 25 cents per ½ ounce air mail.

Magnuson to Talk At DCAS Seminars

Wes Magnuson, chairman of the Convair Craftsmanship program, will keynote four Defense Contract Administration Services seminar/workshops.

They will be the first of a continuing series sponsored by DCAS throughout the country during the year. The four will be at Cameron Station, Alexandria, Va., Jan. 28; Dallas, Tex., Feb. 2; Houston, Tex., Feb. 3; and Tulsa, Okla., Feb. 4.

GD Planes Join SAC 'Silent Fleet'

Late in December, two General Dynamics-built aircraft arrived at Offutt AFB, Neb. to join the "silent fleet" in SAC's Strategic Aerospace Museum.

They are the famed B-58 "Greased Lightning," holder of four international speed and distance records, and a representative F-102.

B-58s were built at Fort Worth division and F-102s at Convair division.

A prime air defense weapon of the Air Force in America, Europe and the Far East, the F-102 was the world's first supersonic, all-weather interceptor. It uses electronic "eyes" to locate enemy aircraft in all types of weather, day or night.

Among "Greased Lightning's" accomplishments was a world record speed run from Tokyo to London Oct. 16, 1963. Time was eight hours, thirty-five minutes, average speed 938 mph. It was the longest supersonic flight in history.

Health Center Service Available For Advice On Pollution Problems

"What are the hazards in using laser beams?"

"What new techniques have been developed for sampling air in coal mines?"

"How does one eliminate fumes created in cutting debrin (a new plastic material)?"

Such queries from far-flung points — DatagraphiX, Freeman Coal Mining Corp. and Canadair in this instance — are made routinely to the Corporation's Bioenvironmental Health Control Center.

"Business is picking up," says Frank Paschal, administrator of the center at Fort Worth division headquarters, "and we are planning many new projects for 1970."

The center was formed to help the Corporation's diverse, coast-to-coast units better control the environment in which they operate.

"Mainly, we want to protect the health of our employes," says Paschal. "But at the same time we want to make sure we're keeping up with health and anti-pollution laws — old and new. In other words, we want to be a good neighbor."

The center has available experts in industrial hygiene and health physics. It also offers consultation service in a number of other areas such as industrial medicine, biology, chemistry and metallurgy.

"In addition to answering basic questions and making routine inspections, we're prepared to conduct special surveys at any of our divisions," Paschal says.

Cost to the using division is relatively cheap: travel, salary and per diem costs for the visiting experts.

"Most of the survey teams will be sent from Fort Worth at the start," Paschal says. "Later, after we've compiled a list of experts at various divisions, we'll likely send people from the nearest location."

One of the center's main roles will be to keep abreast of the many new anti-pollution laws and policies going into effect these days.

Paschal says literature will be kept available on many subjects: health legislation and standards; air and water pollution; air and water sampling; water treatment and disposal; environmental controls; personnel-protection equipment; sanitation; relative toxicities of chemicals; health aspects of new processes; noise; lasers, microwaves, radiation, etc.; rosters of Corporate personnel with technical capabilities; and a list of outside consulting firms.

Be sure to use the ZIP code when addressing mail. It speeds up delivery!

Savings Bonds Interest Increased to 5 Per Cent

Secretary of the Treasury David M. Kennedy has announced an increase in the interest rate on U.S. Savings Bonds from 4.25 per cent to 5 per cent.

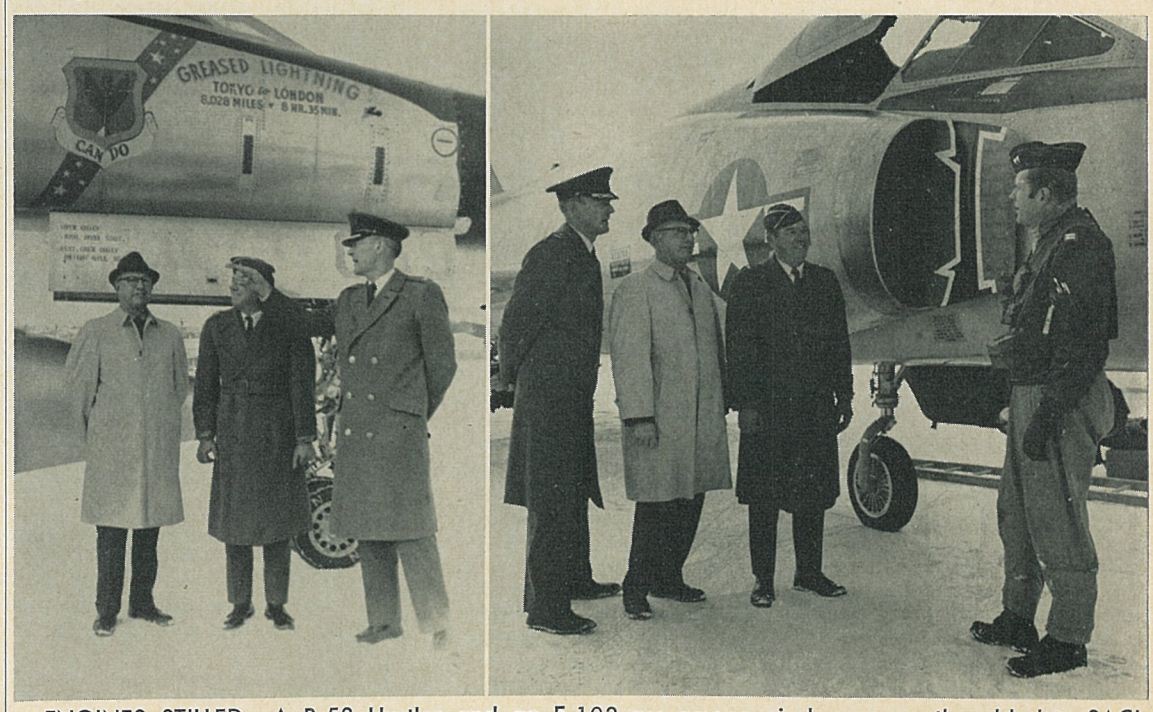
The new 5-per-cent rate applies to all outstanding Series E and H Bonds sold on or after June 1, 1969, if held to maturity. The higher rate also applies to older bonds. Beginning with the first semiannual interest period starting on or after June 1, 1969, rates on outstanding E and H Bonds will be increased to yield 5 per cent, when held to maturity or extended maturity. The original maturity of the Series E Bond has been shortened from 7 years to 5 years, 10 months; H Bonds will continue to mature in 10 years.

"Freedom Shares" (U. S. Savings Notes)—sold in combination with E Bonds, since May 1, 1967—will be removed from sale effective June 30, 1970.

"The new 5 per cent rate assures a more equitable return to millions of purchasers of bonds," the Secretary said.

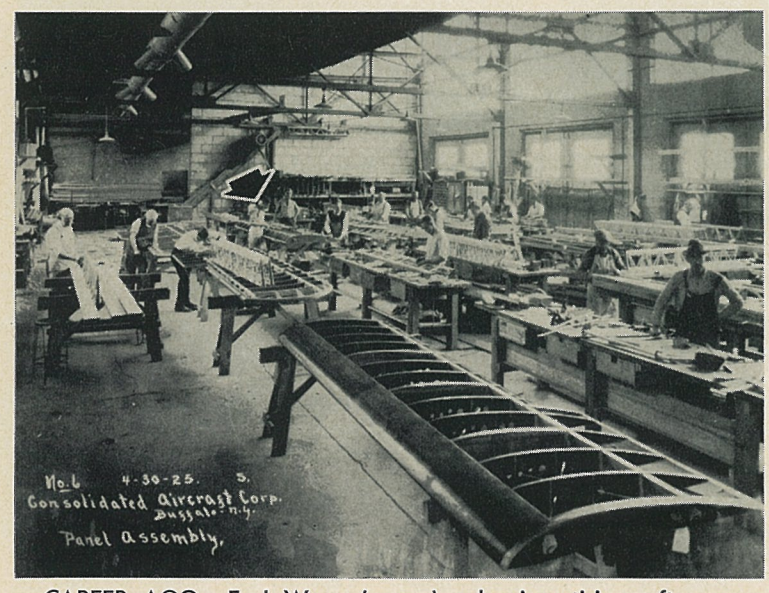
"It also will permit these bonds to continue to make an important contribution to a sound structure of the public debt, by enabling them to remain competitive with other types of savings instruments. . . .

"The continued purchase of Savings Bonds is especially important today when we are engaged in an all-out effort to control inflation and restore health to our economy."



ENGINES STILLED—A B-58 Hustler and an F-102 are among airplanes recently added to SAC's Strategic Aerospace Museum at Offutt AFB, Neb. In photo at right, Capt. Jerry D. Slack, F-102 pilot, discusses airplane with Col. Edward A. Crouchley, base commander; Ed Reynolds of General Dynamics, Brig. Gen. George P. Cole, assistant deputy chief of staff material. In photo at left is famed B-58, "Greased Lightning." USAF photos.

SENIOR SERVICE—Earl Wesp, right, discusses work he performed on Commodore aircraft with Jack Bowers, Convair president, at ceremony in which Wesp received Convair division's first 45-year service pin. Wesp will be among several senior division employes retiring Jan. 30.



CAREER AGO—Earl Wesp (arrow), who is retiring after more than 45 years service with Convair, is shown at work on wing panel assembly at Consolidated Aircraft plant in Buffalo, N.Y., in 1925. He was 17 years old then and had been with company four months.

Retirement in Offing For Convair Veterans

Convair division's first 45-year service pin was presented Jan. 7 to Earl H. Wesp, who joined Consolidated Aircraft Co., forerunner firm to Convair, in 1925, in Buffalo, N.Y., when he was 17 years old. He will retire the end of this month.

H. W. "Jimmy" Meyers, also 17 when he joined the company in Buffalo in 1927, leaves Jan. 30 after almost 43 years service. (He will take a month's vacation before his official retirement date in February.)

H. W. Meyers

Jack L. Bowers, Convair division president, in presenting Wesp his 45-year pin with a diamond setting, said he spoke not only for the division but for Roger Lewis, General Dynamics president, in expressing appreciation.

Wesp was offered a job at Consolidated while visiting the plant with a job-hunting friend in 1925 "just to see what an airplane plant looked like" and started as a panel builder on the all-wooden wing of the PT-1 trainer. He later worked on the Admiral, the company's first seaplane.

His father, the late Jack Wesp, also joined the company in December the same year and was with Convair until 1954 as a maintenance supervisor.

Wesp was tooling supervisor with Consolidated when the firm moved to San Diego in 1935, was in charge of the model shop at Lindbergh Field from 1937 to 1943, and has served as tool manufacturing foreman and a tooling engineer. He now is tooling engineer in Dept. 400-2.

Among his most interesting projects have been preparation of the first precision working model of the B-36 and full-scale functional mock-ups of the F-102 and F-106. Although he's been assigned to the Lindbergh Field plant since 1935, he also worked on tooling for the Atlas ICBM.

Meyers joined the company in 1927 as a toolmaker for Tonawanda Products in Buffalo, a firm later absorbed by Consolidated.

"I had been building Wurlitzer organs since I was 15 and advent of sound motion pictures had caused a recession, leaving me without a job," he recalls. "The job at Tonawanda sounded good—and it's been good for almost 43 years." (R. L. Williams of Dept. 015 is the only remaining Tonawanda veteran.)

After moving to San Diego with Consolidated in 1935, Meyers operated the firm's only jig bore machine four years, became third-shift leadman in 1939, superintendent of tool inspection in 1944, and general foreman in tool manufacturing in 1945.

He became superintendent of tool manufacturing at AF Plant 19 for the F-102 and F-106 programs in 1956 and now is tooling machine shop foreman at LF.

"It's always been interesting," Meyers comments in thinking back over his career, more than 30 years of which has been in supervision.

Other employes leaving Convair this month after 30 to 40 years service include John Woodhead, Dept. 401-1; Dominic E. Palumbo, Dept. 027-0; William O. Blakesley, Dept. 951-6; Peter F. Grijalva, Dept. 840-0; James A. O'Connor Jr., Dept. 049-0; Norma Buell, Dept. 130-2; Harold S. Stutzman, Dept. 194-1; Robert M. Dunbar, Dept. 587-0; Stan Carpenter, Dept. 572-2, and Walter Bailey Jr., Dept. 203-1.

Among other employes retiring this month are Clarence R. Smith of Dept. 587-1, metal stress and fatigue specialist and author who has received international recognition for his Linear Strain Theory and Smith Method of predicting cumulative fatigue damage, and James B. Harter of Dept. 533-2, who has provided modification engineering support for aircraft spare parts.

Access to Dynanet Will Be Controlled By Operators Soon

Beginning Monday, Jan. 26, plant-to-plant dialing between Kearny Mesa and Lindbergh Field will be changed and Dynanet access from Convair division facilities in California will be controlled by Convair operators.

Employes at KM now dial 5-1 to reach LF telephone extensions. Effective next Monday KM callers will dial 5 and the extension. There is no change in LF to KM dialing.

All long distance callers will be required to furnish operators with authorization numbers (department, log number, extension) from the Department Telephone Chargeback Log (Form 5489) when originating a call. Departments may order chargeback logs through Group 21 commercial stores, material number 975052.

From LF, callers will dial 8-8 to reach the Convair operator. When dialing from KM, dial 8 to connect to the operator who will provide the Dynanet line. Regular Dynanet dialing codes can then be used, although some have been changed. Access to other General Dynamics divisions will also go through the operator.

If a long distance call cannot be placed through the Dynanet system, a telephone credit card serial number will be required.

The procedures are being implemented in support of a Corporate-wide effort to reduce costs of the telecommunication network.

For information, call ext. 3528 KM.

Mgt. Club Offers $500 Scholarships

Forms for use by high school seniors in applying for Convair Management Club scholarships are available at division educational services offices, the Management Club office at Kearny Mesa, and area high schools.

Four $500 scholarships will be awarded to sons and daughters of division employes who will be graduating in February or June and who rank in the upper third of their classes.

Award checks can be used by the recipients as desired in helping to meet expenses for their freshman year of college.

Applications must be submitted by March 31, finalists will be called in for personal interview by judges, and winners will be announced and the scholarships presented in June.

Factors considered in selection of winners will include academic achievement, extracurricular activities, leadership qualities, awards and honors, and personality.

Wayne Turner of Dept. 130-3 is manager of the scholarship committee. Other members are Art Braidic, Dept. 830-0; Gene Hartzler, Dept. 195-9; Stan Krebs, Dept. 015-0, and Harvey Seibert, Dept. 954-0.

Insurance Premium Deductions Listed

Convair employes itemizing medical deductions on their 1969 income tax returns may deduct dependent insurance premiums, for the period during which it was paid, in the following amounts:

Hourly employes—Eight weeks at $2.93 and 45 weeks at $2.33.

Salaried employes—20 pay periods at $2.68 and six pay periods at $1.34.

In addition, employes may deduct disability insurance paid the State of California, one per cent of the first $7,400 in earnings during the year or a maximum of $74.

INTELSAT TOUR

The International Communications Satellite Committee of the INTELSAT Consortium will attend briefings and tour Convair Friday, Jan. 30.

S.D. Evening College Courses Begin Feb. 9 in Convair Plants

Sixteen spring semester San Diego Evening College courses will be given for Convair division employes at Lindbergh Field, Kearny Mesa, and Air Force Plant 19 beginning the week of Feb. 9.

Following is a list of the courses by location, days and instructor:

Lindbergh Field

Monday—Introduction to Supervision, Hal Rubin; Personnel Administration, Jack Croft; Shop Math 40, Ed White.

Tuesday—Human Relations 1, Rubin; Management and Organization, Cy Campbell.

Wednesday—Human Relations II, Dave Chigos; Effective Speaking, Will Weidenfeller; Production Planning, Wes Magnuson.

Thursday — Advanced Industrial Economics, Chigos; Industrial Blueprint Reading, Ernie Chavez; First Aid, E. C. Bernhard.

(All Lindbergh Field classes will meet 4 to 7 p.m. in Bldg. 14 and will provide three units college credit except for First Aid, which will meet 4 to 5:30 p.m. and is a one-unit course.)

AF Plant 19

Tuesday—Industrial Blueprint Reading, Ed Madeo.

Wednesday — Introduction to Supervision, Rubin.

(Both classes meet 4 to 7 p.m. in the Bldg. 2 mezzanine conference room, Col. C-2, and provide three units of credit.)

Kearny Mesa

Monday—Electronic Drawings and Circuit Schematics, Elza Milner; Bldg. 33 conference room, Col. A-2; 4:30 to 7 p.m.; two units.

Tuesday—Electronic Drawings and Circuit Schematics (for second shift), Clark Hay; Bldg. 33 conference room, Col. A-2; 1:45 to 4:15 p.m.; two units.

Mondays and Wednesday—Supervision and Management of Safety Programs, Len Breen; 4:30 to 7 p.m., Bldg. 17, Rm. 1; three units.

Registration will be at first class meeting. Only charge is a $1.50 student activity fee. Pre-enrollment to insure a place in desired class may be made by calling Diane Moore of educational services, ext. 2564 LF. Inquiries about course content may be directed to Rubin, ext. 2564 LF.

Wilson Named Mgr. Of Improved Centaur

C. E. Wilson has been appointed program manager of the Improved Centaur D-1 program, reporting to Ken Newton, director of launch vehicle programs.

Newton formerly had been acting program manager for Improved Centaur and Wilson had been deputy program manager. Wilson now has full responsibility.

Quality Engineers Plan Feb. 9 Meeting

The San Diego section of the American Society for Quality Control will hold its monthly dinner meeting at 6:30 p.m., Feb. 9 in the Catamaran Hotel.

Speaker will be Glen L. Lay, human engineer from National Steel and Shipbuilding Co. For information, call Sam Petcher or Eric Callard, ext. 2243 KM.

SAFETY ENGINEERS PAY TRIBUTE

The San Diego chapter of the American Society of Safety Engineers has presented its first honorary membership to David Chigos, an education specialist in Convair's Dept. 130-3, in recognition of a symposium on "Modern Safety Management" presented for the chapter in December.

TOYS COLLECTED FROM KM POOL

Two hundred and twenty-five toys were collected at the reflection pool in Bldg. 2, Kearny Mesa, for children during the holiday season.

VAFB Employes Aid 19 Agencies

The Convair Employes' Con-Trib-Club at Vandenberg AFB contributed $6,966 to health and community service organizations during the year.

Receiving money were: American Cancer Society, $500; Arroyo Grande Family Services, $100; Arthritis Foundation, $300; Boys' Club of Santa Maria, $140; Easter Seal Society, $200; Elks Recreation Fund, $140; Guide Dogs for the Blind, $250; Heart Fund, $300; Lompoc Valley Hospital, $396; March of Dimes, $300; Muscular Dystrophy, $250.

Salvation Army "Operation Big Brother," $250; Salvation Army Christmas Appeal, $340; Boy Scouts (San Luis Obispo County), $100; Santa Maria Servicemen's Center, $250; Tuberculosis & Health Association, $500; United Fund-Northern Santa Barbara Council for Retarded Children, $100; Lompoc Girls Club, $50.

Payroll deductions of Vandenberg employes are redistributed back to Vandenberg on an actual basis, less 10 per cent retained in the Convair Emergency Aid fund.

AGE Conference Held on Spares

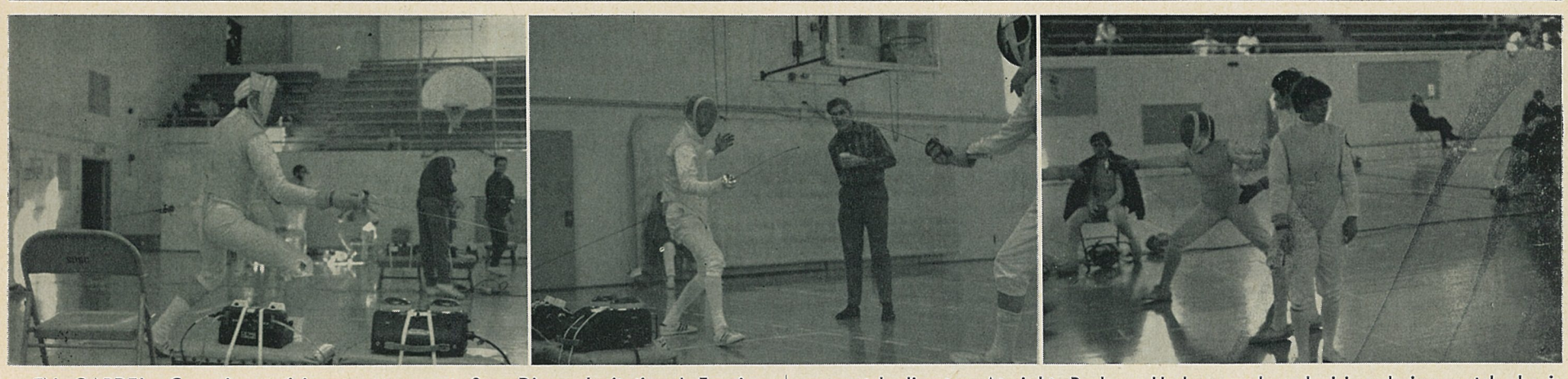
A ten-day spare parts conference between General Dynamics and Air Force representatives was conducted at Convair division Jan. 6-16.

Members reviewed 3,500 items in the Convair designed and manufactured Tape Preparation Set (AGRED 6660), an Aerospace Ground Equipment (AGE) unit in the F-111 program.

Convair has an order for 14 of the units with a potential for six additional. Eight have already been manufactured and shipped.

This was the first AGE suppliers conference held at Convair in connection with the F-111 program.

SUPPLIERS CONFERENCE—Air Force and General Dynamics personnel confer on spare parts at Convair. Clockwise around table from left of box are Ken Yzelman, Convair; F. B. Cumberlin, Fort Worth; Loyd W. Wayman, SMAMA, Sacramento; Jose B. Maestas, chairman of conference, SMAMA; Sgt. C. J. Bartholomew, TAC, Cannon AFB; Sgt. R. G. Yeager, SAC Maintenance, Carswell AFB; Capt. G. F. Smedley, H.Q., SAC, Offutt AFB; Jerry Bellmore, SMAMA. Standing, from left, are D. G. Clark, Convair; Jack Foster, Convair; R. L. Coffer, Convair; Ernest A. Hughes, SMAMA; W. J. De Lafont, Convair; Maj. John A. Wathen, SAC Programs, Carswell AFB; Tom Chadwick, Convair.



EN GARDE!—Convair participants at recent San Diego Invitational Fencing Tournament are, from left, Mike Hurley, Dept. 585-0, in preliminary stance prior to attacking. In center, with coffee cup, is Ray McNamara, Dept. 512-2, who is acting as match director. At right, Barbara Hurley ponders decision during match she is directing. McNamara is president of CRA-YWCA sponsored San Diego Fencers Club. Hurley is CRA Commissioner and club business manager.

Skiers Leave For Week At Colorado Resorts

Twelve members of the Convair-Don Diego Ski Club will be among 45 from the San Diego area leaving by bus Friday (Jan. 23) for a 10-day ski trip to Aspen and Vail, Colo. Another half-dozen Convairites plan to fly to the resort for several days on the ski slopes.

The Ski Club will be sponsoring its own bus trip to Sun Valley, Idaho, Feb. 27 to March 8—with about 36 members already making plans to spend a week's vacation on the outing.

Reservations have been made at Challenger Inn, Harriman House, and Red Top Cabins with accommodations at a variety of prices. Sign-up for the trip can be made with Helen Navoy, ext. 2480 KM.

Harry Eastman, club co-commissioner, said Sun Valley is an excellent location for beginners to learn to ski as well as an ideal setting for experienced skiers.

The Convair-Don Diego group will be competing in ram (giant slalom) and sun (high-speed downhill) racing competition during the week.

Members of the club were skiing last weekend at June Lake north of Mammoth and had a ski outing in the rain Jan. 11 at Snow Summit. Several participated in a round-robin over New Year's with one day of skiing each at Heavenly Valley, Squaw Valley, Alpine Meadows, and Mammoth Mountain.

Square Dance Series Slated

CRA Dynamic Eights square dance club will begin two instruction courses in February, one for beginners and one for intermediates, in the CRA Clubhouse.

Intermediate class membership will include dancers who have completed a beginning course in fundamentals. This series will run four consecutive Tuesday evenings beginning Feb. 3 at 8 p.m.

The club's new beginner class will step off Feb. 10 and continue each Tuesday through June 9-10 p.m. This course includes complete basic square dance techniques.

Membership in the beginner class is unlimited and is open to employes, families and friends. Fees are a 50 cent donation at each session. Registration is at the first session attended and continues through Feb. 24.

Caller for both courses is Clark Elliot.

For information contact R. J. Collette ext. 1050 LF.

Ballroom Dancing Class Continuing

A CRA sponsored ballroom dancing intermediate class will hold the second of 12 Monday evening instruction sessions Jan. 26 at 7:30 p.m. in the Missile Park picnic shelter.

The complete course is still available. Registration is at the first session attended and cost is $18 per couple.

Instructor Bob McGlade will cover basic steps including fox trot, waltz, swing, tango, rhumba, samba and cha-cha.

Contact Royce Riggan, ext. 2001 LF or 420-3775 for information.

Shooters Compete In Jan. 11 Match

Fourteen shooters competed in three categories at CRA Pistol Club's Jan. 11 matches at police pistol range.

Categories and winners were: Masters — Don O'Brien, 292-7x; Warren Walker, 291-7x; Expert—Richard Sutton, 279-5x; Jerry Lehrer, 273-10x; .22 cal Short National—Roland Schneider, 283; O'Brien, 281; Warren Walker, 280; Jim Halfacre, 273.

Next match is Jan. 25 at 9:15 a.m. at police range.

HOCKEY GAME TICKETS OFFERED AT SAVING

Tickets for the 8 p.m. Sat., Jan. 31, game between the San Diego Gulls and Phoenix Roadrunners are on sale at CRA and employe benefits outlets. Cost for $3.50 tickets is $2.75.

Pilot Ground Class to Begin

CRA Bonair Flyers will hold a private pilot ground school course designed to prepare students for the FAA private pilot written examination.

The course will be from 7:30 p.m. to 9:30 p.m. Mondays, beginning Feb. 16, and will run for 15 consecutive weeks.

Pre-registration ends Feb. 3. Total cost for the course is $20 which will include books, plotter and flight computer to be retained by the student. A pre-registration fee of $5 is required which will be applied to books and supplies.

For information and registration forms, contact George Hazelrigg, 3368 KM; Red Taylor, 3393 KM; Steve Adams, 1223 LF; or Jim Moody, 1695 LF.

Night at Caliente Slated by Club

The Convair Management Club is sponsoring a night at the Caliente Greyhound Races, Saturday, Feb. 14. Chairman of the event is Mike Alianelli.

Tickets will be on sale from Club boosters beginning Feb. 2. Price will be $3.50.

Rockets-Bucks Game Ticket Price Reduced

Convair Management Club is offering tickets for the 8 p.m. Feb. 4 basketball game between the San Diego Rockets and the Milwaukee Bucks. Regular $4 seats are $3 from CRA and employe benefits outlets.

CHESS CLUB MEETS WED., JAN. 28

The first reorganization meeting of the CRA Chess Club will be at 7 p.m. Wednesday, Jan. 28, at CRA Clubhouse. For information call Pete Beyrer, ext. 1111 KM; Jack Maughmer, ext. 2659 KM; or Art Greensite, ext. 2185 or 1796 KM.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Jan. 27. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

ADVENTURERS—Fish Creek Mountain in Anza-Borrego Desert weekend, Jan. 31-Feb. 1. Meeting tonight (Jan. 21), 7:30 p.m.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BALLROOM DANCING—Intermediate dance class meeting Monday evenings 7:30 p.m. New members are welcome.

BICYCLE CLUB—El Cajon Valley, 50-mile ride, Jan. 24, Meet 7:30 a.m., Fletcher Parkway Bowl. Mission Bay, 12-Mile ride, Feb. 1. Meet, 9 a.m., The Islandia.

BRIDGE—Duplicate bridge sessions each Friday, 7:30 p.m.

CERAMICS—Meet Tuesdays and Thursday, 9 a.m.-noon and 7-10 p.m.

CHESS—Reorganization meeting, Jan. 28, 7 p.m.

CHORUS—Rehearsals Monday, 7:30 p.m.

COUNTRY AND WESTERN MUSIC—Meet Thursdays, 7:30 p.m., CRA Missile Park picnic shelter.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GUN CLUB—Fun shoot, Jan. 25, 9 a.m., Gillespie Field gun range.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m. Monday through Thursday; 9:30 a.m. to 9 p.m. Fridays; 10 a.m. to 5 p.m. Saturdays; "Women Only" weekdays, 9:30 a.m. to 11 a.m.

ICE SKATING—GD family skate night each Thursday, 6:15-7:45 p.m., House of Ict, Interstate 8 and Lake Murray Blvd. Flat rate fee $1 (includes skates).

MINIATURE RAILROAD—Work sessions Saturdays, and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Wednesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Club shoot, Jan. 25, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RIFLE CLUB—Senior shoot, Jan. 28, 7 p.m., Gillespie Field Range.

SAILING—Meeting Jan. 28, 7:30 p.m.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m.

SKI CLUB—Sun Valley ski trip, Feb. 27-Mar. 8.

SPECIAL EVENTS — CRA-sponsored dance, Jan. 24, Hotel del Coronado, 8 p.m.-2 a.m.

SQUARE DANCE—Dance Thursdays, 8-10 p.m. Dance class for intermediates starts Feb. 3. Beginner calss starts Feb. 10, at 8 p.m.

STAMP CLUB—Meeting Jan. 22, 7 p.m.

TABLE TENNIS—Friday night leagues now forming, 7:30 p.m. Play Saturdays, 10 a.m.-4 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday 4:30 p.m. Dynamic Toastmasters No. 457, Thursdays, 5:30 p.m.

TOURS—European tour, May 3. Meeting for interested employes Jan. 22, 7:30 p.m.

WIVES CLUB—Potluck and craft sessions, Jan. 28, 10 a.m.

Plant 19 Team Leading Field

The Plant 19 Allstars remain the only undefeated team in either the Slow Break or Fast Break CRA Basketball leagues. Standings, after three weeks of play, are:

FAST BREAK	
Aero	2-1
Tool Control	2-1
Under Brush	2-1
DatagraphiX	2-1
Cosmo Bums	1-2
Hot Shots	0-3
SLOW BREAK	
Plt. 19 Allstars	3-0
GASP	2-1
Underdogs	2-1
Net Jets	1-2
SD Mod Center	1-2
Reproducers	0-3

Wives' Card Party Scheduled Feb. 4

The annual card and game party sponsored by the Convair Wives Club will be played from 10 a.m. to 3 p.m. Wednesday, Feb. 4, at CRA Clubhouse.

The event is open to all Convair wives and the general public. There will be cards, a light lunch, door and table prizes. Some bazaar items, food stuff and a club cookbook will be for sale.

Donation is $1.50. For information call Eleanor Bulman, 273-4215 or Flora Loftin, 276-4270. For tickets call Margaret Brock, 583-1474 or Lorraine Hudson, 278-0521.

Tour Reservations For Europe Accepted

Reservations are being accepted for the CRA Europe charter tour leaving San Diego May 3.

A meeting for all interested will be at 7:30 p.m. Thursday, Jan. 22 at CRA Clubhouse.

Cost of the "grand tour" is $695, the Scandinavian air/sea tour is $875 and the Spain tour is $845. All programs include jet travel from San Diego to Copenhagen and return from London. Air transportation only is available for $335.

For information call 1111 KM.

TURK MURPHY

Turk Murphy's Jazz

CRA Sponsors Dance Concert

A dance concert featuring Turk Murphy and his San Francisco Jazz Band is being sponsored by Convair Recreation Association Saturday evening, Jan. 24, at Hotel del Coronado, 8 p.m. to 2 a.m.

Murphy and his band are widely known in jazz circles and play New Orleans style Dixieland music.

Murphy plays at a club in San Francisco called the Earthquake McGoons and was an original member of LU Watter's San Francisco group in 1939.

The band features Pat Yankee as vocalist although Murphy is also noted for his particular brand of singing.

Tickets at $2.50 each are available at all CRA, employe benefits, and Convair Management Club outlets. The event is open to the public.

Hurley, Wife Place In Fencing Tourney

Mike Hurley, Convair Dept. 585-0, took third in the men's division of the 10th San Diego Invitational Fencing Tournament last month. His wife, Barbara, was second in the women's division.

They were the only members of the CRA and YWCA-sponsored San Diego Fencers' Club to place.

Mrs. Hurley was runner-up to Maxine Mitchell, a member of the U.S. Olympic team. Hurley was in a three-way tie for first but lost in a fence-off.

Hurley said the club tries to attract best fencers from the Los Angeles area. This generally means, he said, that "we learn more but suffer in the standings."

Adventurers Set Desert Campout

CRA Adventurers have scheduled a weekend outing Jan. 31-Feb. 1 at a primitive campsite in the scenic Fish Creek Mountain area of the Anza-Borrego Desert about 100 miles from San Diego.

Those making the trip will rendezvous at 9:30 a.m. Saturday (Jan. 31) at the cafe at the Fish Creek Ranger Station turnoff on Highway 78 at Ocotillo Wells, then will drive to the camp area in the north fork wash.

Campers must bring water and wood as well as other supplies and there are no sanitary facilities at the site. Short excursion hikes will be taken and a trip into Sandstone Canyon may be made if there are enough four-wheel-drive vehicles to provide shuttle service.

Phone Dick Bowen, trip leader, 278-9846, or John Anderson, assistant leader, 277-5568, for additional information.

* * *

Dr. Charles Harbison, curator emeritus of entomology for San Diego Natural History Museum, will present a half-hour color slide presentation at the Adventurers Club meeting at 7:30 this evening (Jan. 21) in CRA Clubhouse.

A 25-minute color film on protection coloration and mimicry of tropical insects also will be shown.

50-Mile Cycle Ride To Start at Bowl

CRA Bicycle Club will pedal 50-miles Saturday, Jan. 24, from Fletcher Parkway Bowl to El Cajon Valley. The ride will begin at 7:30 a.m. under the leadership of Rus Kennedy.

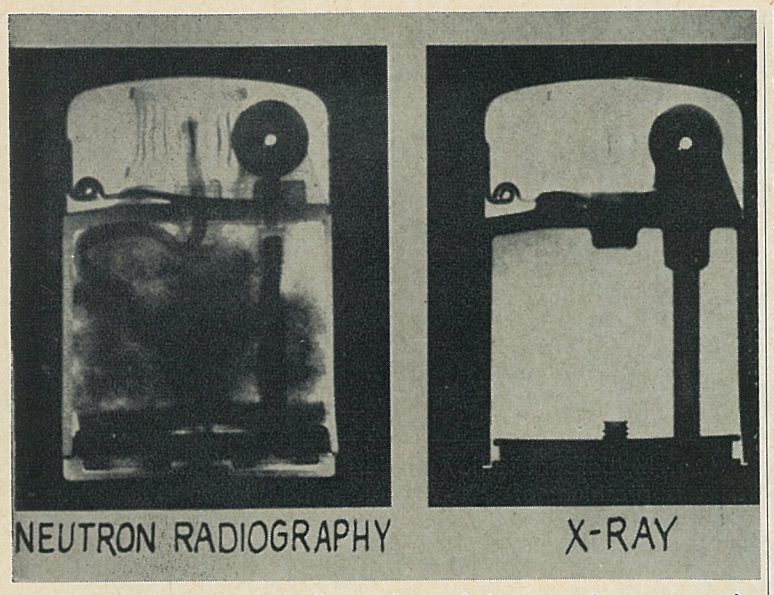
On Feb. 1, Phil Neiswender will lead a 12-mile ride beginning at 9 a.m. from Islandia to Mission Bay.

For information call Dave Lukens, ext. 2881. In the event of rain, the rides will be cancelled.

Table Tennis Team League Organizing

A CRA Table Tennis League is being formed. Four man teams will play Friday nights at CRA Clubhouse.

All General Dynamics employes in the San Diego area are eligible. Deadline for entering is Jan. 28. For information call Pete Beyrer, ext. 1111 KM.



COMPARE—Neutron radiography technique produces more detailed "pictures" than regular X-ray, as shown in above shots of regular cigarette lighter.

Million Dollar 'Pinhead' to Aid In Parts Check

Fort Worth division will use a new man-made radioactive element — californium-252 — to carry out non-destructive tests on aircraft parts and systems.

This method of testing with a radioactive material is called neutron radiography. The technique permits detailed "pictures" to be taken through dense materials.

"Regular X-rays can be 'shot' only through relatively thin materials, and they aren't as detailed," said W. E. Dungan, design specialist in nuclear and applied research, and director of the project. "With this new technique, we can 'look' through as much as three or more inches of lead."

Dungan said the division started using neutron radiography in 1966 to inspect shaped-charge assemblies in separation systems of capsules.

He said the technique is being considered for testing hard-to-get-to-parts, such as: welds and joints; sealed components and assemblies (explosive devices, fuses, etc.); hydrogen pick-up in metal parts; and advanced composites.

"Frankly, we're hoping to use neutron radiographic techniques to find solutions to many inspection problems that have resisted efforts by other non-destructive methods," Dungan said.

He said nuclear reactors had so far been used as the division's chief source of neutrons.

"Californium-252," he said, "is about 1,000 times more effective per unit weight than other artificial sources of neutrons, and it has a relatively long useful life —over five years. The isotope emits a large number of neutrons by spontaneous fission, making it potentially useful in a portable radiographic device."

There are three ways of producing californium-252. The simplest is to bombard a mixture of plutonium-2½, Americum - 243, and curium isotopes in a high-powered reactor for from one to two years.

Only 22 milligrams of the new isotope had been produced by the Atomic Energy Commission by 1969.

Californium-252 On Loan From AEC

Fort Worth division is one of only a handful of commercial firms which have signed a contract with the Atomic Energy Commission for loan of californium-252 for practical studies.

The studies will be part of AEC's market-development program for the man-made element, which has wide potential application in several fields.

Dr. Glenn T. Seaborg, chairman of AEC and co-discoverer of californium-252, said Fort Worth will use a 1,000 microgram source (a microgram is a millionth of a gram).

HOT STUFF — Herb Oakley, left, and Warren Dungan simulate loading californium-252, rare man-made radioactive element which will be used in Fort Worth division's neutron radiography effort.

About 1,000 micrograms, or about 1/28,000th of an ounce of the isotope, will be loaned to Fort Worth. This represents only about five per cent of the total available supply of the isotope.

The isotope itself — about the size of a pinhead and costing about $1 million to produce — will be shipped to Fort Worth in a capsule about ¾-inch long by ½-inch wide. It will be delivered in a steel shell containing paraffin to attenuate neutrons from the self-fissioning material.

"It's hoped that enough californium-252 will be used by industry during the next decade to reduce the cost to something on the order of $500 a milligram," Dungan said.

F-106 Squadron Wins AF Honor

The 71st Fighter Interceptor Squadron at Malmstrom AFB, Mont., which flies Convair division-produced F-106s, has been awarded the Hughes Achievement Award as the Air Force's most outstanding interceptor unit for 1969.

An Air Force tactical evaluation team selected the winner after world-wide judging of interceptor squadrons on their performance of the air defense mission. Among criteria considered were engagement in active air defense operations, daily intercept success, aircraft operational ready rate and weapons verification, flying safety, and squadron improvement in intercept tactics and techniques.

Guests at the Dec. 5 award ceremony, which began with a flyby of 16 of the squadron's F-106s, included Lt. Gen. Arthur C. Agan, commander of the Aerospace Defense Command; Maj. Gen. William D. Greenfield, commander of the 10th Air Force, and Col. James M. Fogle, vice commander of the 24th Air Division.

Convair was represented by B. F. Ferguson, deputy program manager for the F-102/F-106 program office, and C. W. Stevens, field service representative assigned to the squadron.

The 71st FIS was the second F-106 unit to win the annual award. The 329th FIS at George AFB, Calif., was winner in 1964.

Lewis Transfers Responsibilities

Organizational changes at General Dynamics Corporate Headquarters to strengthen and diversify major product development have been announced by Roger Lewis, president.

E. H. Heinemann, former vice president-engineering and program development, has been named vice president-special projects, reporting to Lewis. Initially, he will explore corporate capabilities and domestic and international market potential.

Dr. George Mueller, who recently joined General Dynamics after service as NASA associate administrator for manned space flight, has been named vice president-programs and development.

Reporting to Mueller will be functions previously under Heinemann as well as those reporting to J. C. Franklin, former vice president-corporate development. Franklin has reached mandatory retirement age but will continue as a consultant to assist General Dynamics in its oceanographic activities.

Roger Lewis Comments On Nellis Accident

Roger Lewis, president and chairman of the board of General Dynamics Corporation, stated the following in response to news media inquiries:

"Since the F-111 accident at Nellis AFB Dec. 22, 1969, General Dynamics and the Air Force have been participating in an intensive investigation to determine precise reasons for the accident. Such investigations naturally take time and this has permitted considerable news and political speculation. In view of this I believe several points should be made clear:

"1. General Dynamics has firm contracts for the F-111 running through mid-1972. These contracts call for the delivery of 516 F-111s. To date 230 F-111s have been delivered.

"2. Future orders for the F-111 for delivery after 1972 will be subject to budgetary constraints and Congressional action. This is also true for every other major government program.

"3. The requirement for the F-111 has been affirmed and reaffirmed by the U.S. Air Force. The reason is quite simple—it performs a mission that cannot be filled by any other aircraft.

"4. The safety record of the F-111 at the current 59,000-hour mark is the best of any new fighter in history. The pilots who fly the airplane and who are the ultimate judges consider that its combination of performance and safety make it the finest that they have ever flown.

"5. The investigation of the December accident at Nellis AFB is not complete. Final responsibility for the investigation rests with the Air Force. However, we already know several facts. The accident was caused by a material defect—it was not due to a design deficiency. It was not caused by a fatigue failure.

"6. We have complete confidence in the F-111 and believe that, because of its unique capabilities, its demonstrated high performance and cost effectiveness, it will be a mainstay of our tactical and strategic air forces for many years to come."

Lightweight Parts, Strong as Steel, Emerge from New Autoclave

An autoclave that will compress composite materials at 10,000 pounds per square inch (PSI) at 900 degrees F. has been placed in operation in the engineering materials and processes development lab at Convair division's Lindbergh Field plant.

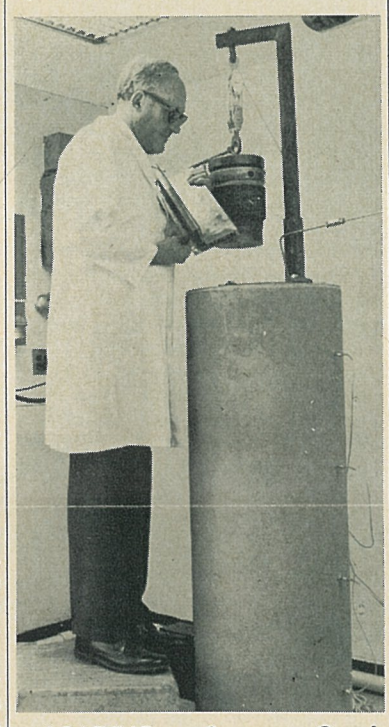
Ross Wiant, Dept. 572-2 engineering specialist, and Seymour Goodman, senior metallurgist, said the pressure chamber, 40 inches deep and 6 inches in diameter, is believed the largest externally heated autoclave ever produced.

The autoclave will be used by Convair primarily for bonding aluminum-boron composites.

In this process, alternating layers of 6061 aluminum foil and of brittle reinforcing boron filaments (usually 180 per inch and oversprayed with aluminum) will be bonded together through heat and pressure.

The resulting composite material will provide high strength to weight ratio. It is as strong as medium strength steel but as light as aluminum.

The autoclave, largest externally-fired pressure vessel permitted by law, was produced to Convair specifications by Autoclave Engineers of Erie, Pa., and its automatic control system was developed by Convair.



LOADING — Seymour Goodman, Convair senior metallurgist, places aluminum boron composite material for angle test element in new autoclave for bonding. Device is largest externally heated pressure vessel permitted by law.

The pressure chamber for the device is made of high-temperature steel and has been tested at 19,600 PSI. In addition to operator control, the autoclave is equipped with four automatic safety devices to prohibit overpressurization. Included are a pop-off valve, a pump pressure regulator, an electrical pressure set-point, and a pressure rupture disc.

Helium used in the pressure chamber will be reclaimed and pumped back into the storage tank for reuse.

Wiant said the autoclave can be heated to 900 degrees through its electrical-resistance heating system in two hours and that desired temperature can be maintained within five degrees for extended periods.

Several aluminum-boron test articles have been bonded in the device. Tooling is being completed for bonding F-111 fuselage test bulkhead components from aluminum-boron.

Goodman said uniform pressure within the autoclave permits forming of seamless tubing, "I" beams, channels, and various angles.

"Shapes that can be created are unlimited as long as you can surround the composite material with tooling so the shape desired can be retained while the heat and pressure are applied," he said.

Quincy Division Name Altered

Effective Jan. 1, 1970, the Quincy division of General Dynamics has been renamed Quincy Shipbuilding division, Lloyd Bergeson, division general manager and Corporate vice president, announced.

The change coincided with the yard's sixth anniversary as a General Dynamics facility.

Bergeson said the word "shipbuilding" was added to the name to provide stronger employe, public and customer identification with the 181-acre yard's professional mission — building U. S. Navy and merchant ships.

Since it was acquired by General Dynamics on Jan. 1, 1964, the Quincy Shipbuilding division has grown from a facility with essentially zero employment and business to a work force of 8,300 with a business backlog extending into the mid-1970s.

In six years, the shipbuilding center has produced a wide variety of ships, including four nuclear attack submarines, three electronic instrumentation ships to support the Project Apollo moon program and four Navy supply ships.

It is currently working on a backlog of $380 million in Navy and merchant contracts.

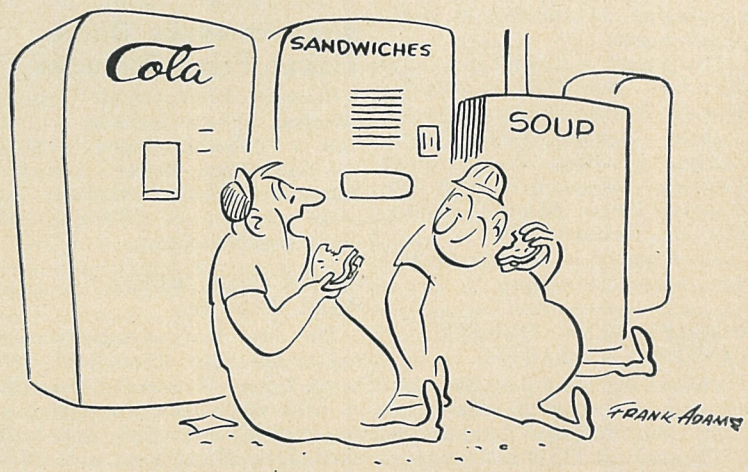
Employes of the division come from 300 communities throughout Massachusetts and many other cities and towns in Maine, New Hampshire, Rhode Island and Connecticut. The shipyard buys equipment, supplies and services from 2,726 other companies in Massachusetts alone.

Since it was founded in 1884 as the Fore River Engine Co. by Thomas Watson — Alexander Graham Bell's associate in development of the telephone — the shipyard has undergone a series of name changes.

In 1901, the shipyard's name was changed to the Fore River Ship and Engine Co. Two years later it became the Fore River Shipbuilding Co.

In 1917, the shipyard was renamed Bethlehem Shipbuilding Corp. Ltd., and on Jan. 1, 1964, it became the Quincy Yard of the Electric Boat division of General Dynamics.

It was named the Quincy division of General Dynamics on March 8, 1966.



"The best thing about working in this department is the food!"

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 23, No. 3 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, February 4, 1970

David Forest Selected for Design Award

J. David Forest, Dept. 512-2, has received Convair's first Design Achievement Award in engineering.

The award was given under a Corporate program begun in 1969 **(GD/NEWS Jan. 22, 1969)**. Forest received a certificate and $500 honorarium. He now becomes eligible for the General Dynamics Corporate Design Achievement Award which carries a certificate and $1,000 honorarium.

Forest received the award for "advancing the application of new aerospace materials through design and use of advanced metal-matrix composite material in a significant, practical structural component."

Forest and his technical team successfully designed the PRIME (Precision Recovery Including Maneuvering Re-entry) payload adapter as an aluminum boron composite structure.

The adapter, which fits the PRIME payload to the Atlas launch vehicle, is the largest piece of hardware ever made of aluminum boron composites and measures three-and-a-half feet high by five feet in diameter. It represents a 42 per cent weight savings over a similar adapter made of aluminum.

The selection was made after initial nominations by the engineering department and launch vehicles department. F. D. Applegate, director of product design, nominated six candidates, J. M. Wild, director of engineering technologies, nominated five and K. E. Newton, director of launch vehicle programs, nominated six. After initial screening, the final decision was made by a committee composed of W. W. Fox, acting vice president-research and engineering; L. E. Lightbown, chief engineer, engineering LVP, representing Newton; Applegate; P. D. Ferrara, director of engineering administration and services; and Wild.

Besides Forest, the other finalists and their engineering contributions were:

Roy F. Austin, Dept. 979-2, configuration control system for ships being produced at Quincy

(Continued on Page 2)

ENGINEER OF YEAR—J. David Forest of Convair's Dept. 512-2, center, receives first division Design Achievement Award under Corporate program from Lyman C. Josephs, Convair general manager. At right is W. W. Fox, acting for vice president-research and engineering.

More Fuselage Sections Nearing Completion

The last fuselage sections (E and F/G) for the first DC-10 wide-bodied tri-jetliner are slated for completion at Convair division's Lindbergh Field plant late this month, according to Jack Hurt, DC-10 program manager.

Additionally, Hurt said, section C/D for ship number two is slated to "go out the door" in February. All three sections are now in final stages of assembly. Convair's goal is delivery of 13 complete fuselages in 1970.

The last sections, the center and aft fuselage assemblies, measure 33 and 39 feet respectively. The first front section (C/D), delivered Jan. 9 **(GD/NEWS Jan. 21)**, measured 55 feet. The entire craft, when complete, will stretch 179 feet in length with a maximum width of 20 feet.

Convair has a long term contract with McDonnell Douglas to produce 300 fuselages through 1974. Each fuselage is fabricated in five parts which are assembled for delivery in three main sections, C/D, E, and F/G. Convair also will build specially configured fuselages for DC-10 long-range transports and convertible freighters.

DC-10 employes at Convair are currently working on a seven-day, two shift work week, as required. Some 750 men and women are accomplishing assembly and fabrication operations.

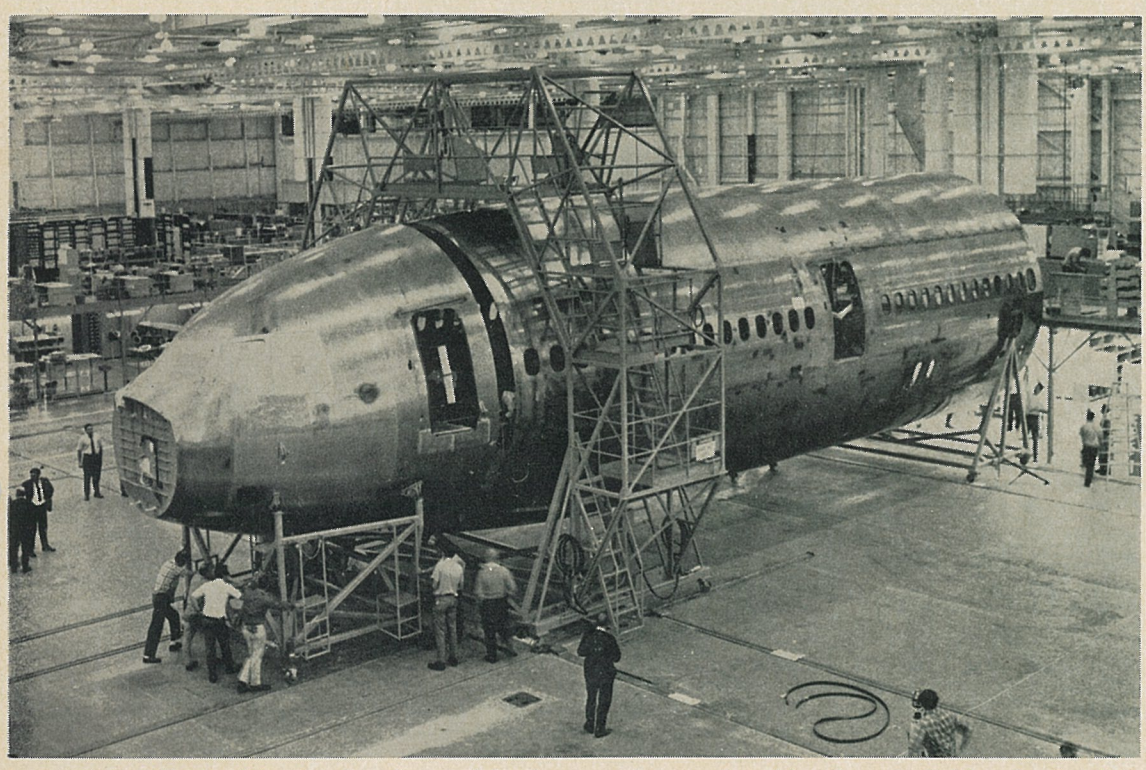
McDonnell Douglas has scheduled the "roll out" of its first production DC-10 tri-jetliner in July with maiden flight set for September.

Con-Trib-Club Grants $5,772

Grants totaling $5,772.38 were approved by the Convair Employes' Con - Trib - Club during January.

The Episcopal Community Service was granted $2,880 for the Community Crisis Center; the Mayor's Council on Youth Opportunity was granted $1,420, and the Economic Opportunity Commission of San Diego received $522.38.

Agencies in the Vandenberg AFB area received $950 with $250 going to the Muscular Dystrophy Association of America, $500 to the Tuberculosis and Health Association of Santa Barbara County, and $200 to the Easter Seal Society for Crippled Children and Adults of Santa Barbara County, Inc.



TAKING SHAPE—Fifty-five-foot forward fuselage section produced by Convair division for first DC-10 tri-jetliner is mated with nose section shortly after being delivered to Douglas Aircraft Co. plant in Long Beach Jan. 9. Douglas production officials were pleased with accurate alignment, which facilitated immediate joining of the two sections. Nose section was produced at Santa Monica facility of McDonnell Douglas Astronautics Co.

Lewis Reports On 1969 Sales

Consolidated net sales of General Dynamics Corporation and subsidiaries for the year ended Dec. 31, 1969 were $2,508,755,000, Roger Lewis, president, announced last week. That compares with net sales of $2,662,238,000 in 1968.

Net income for the year ended Dec. 31, 1969 was $2,531,000, equivalent to 24 cents per common share. Exclusive of extraordinary gains, net income in 1968 was $29,756,000, equivalent to $2.83 per common share. There was an extraordinary gain of $8,927,000, or 85 cents per common share, in 1968.

Lewis reported that net income in the fourth quarter of the year was $11,589,000 or $1.10 per common share. Net income in the third quarter of 1969 was $10,-314,000, or 98 cents per common share.

Earnings in the second half of the year more than offset a net loss of $19,372,000 in the first six months of the year. The net loss resulted from writeoffs of $59,-044,000, after taxes, on certain long-term naval surface ship and submarine contracts. Of this amount $53,144,00 was charged against 1969 earnings and the remainder to a previously established reserve.

"Earnings have been depressed for the past three years," Lewis said, "because of writeoffs of excess costs on certain long-term naval surface ship and submarine construction contracts."

Lewis said that the company's Marine Group (Electric Boat division and Quincy Shipbuilding division) had a net loss of $46.3 million in 1969 compared to $38.5 million in 1968. Writeoffs in both years were partially offset by profitable business within the group.

Lewis said that the Aerospace Group, which includes the Fort Worth, Convair, Electronics and Pomona divisions and Canadair Limited, had sales of $1.9 billion in 1969 compared to $2.0 billion in 1968, and net income of $32.6 million in 1969 compared to $52.4 million in 1968.

The largest single factor in the Aerospace Group's earnings decline in 1969, Lewis noted, was a loss at Canadair Limited, but he noted that there was a decline in sales volume and profits at the other aircraft and space divisions.

"Our commercial operations are continuing to do well," Lewis said. "Our Resources Group, including Material Service Corp., Marblehead Lime Co., Freeman Coal Mining Corp. and the United Electric Coal Companies, increased earnings in 1969 to $10.9 million compared to $8.8 million in 1968, on just about the same sales volume of $151 million. Resources Group earnings in 1968 are after a charge of $1.3 million to cover the abandonment of certain obsolete facilities.

A related business, Asbestos Corp. Limited, in which General Dynamics holds 54 per cent ownership through its Canadair Limited subsidiary, had a 26 per cent earnings increase in 1969. It earned $6.1 million (Canadian) on sales of $50 million in 1969, compared to $4.9 million on sales of $44 million in 1968. Asbestos Corp.'s 1969 sales from February through December are consolidated in General Dynamics results for 1969 but only 54 per cent of its net income, or 3.3 million (U.S.) is consolidated.

Stromberg DatagraphiX, a subsidiary that supplies computer output microfilm equipment to a wide range of businesses, increased sales to $27 million in 1969 from $17 million in 1968. Net loss for Stromberg DatagraphiX was $6.0 million in 1969 compared to $3.4 million in 1968.

"DatagraphiX is in the process of developing a new market," Lewis said, "and the loss for the year represents part of the price of developing a product line and a sales and service force, as well as production capacity, to compete in the growing market for com-

(Continued on Page 2)

Adams Named To Eng. Position

Richard E. Adams, an engineer with 28 years of aerospace design and development experience, will join Convair division Feb. 15 as vice president-research and engineering reporting to Lyman Josephs, vice president and general manager.

Richard Adams

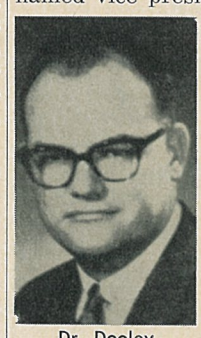
Adams has been with Fort Worth division since 1951 as an assistant project engineer, project engineer, chief of preliminary design, chief of advanced design, and director of advanced programs. During this time, he has worked on every major new-aircraft proposal submitted by the division.

Before joining General Dynamics, he worked on nuclear aircraft studies with the NEPA division of Fairchild Engine and Airplane Corp. He previously had been employed by Lockheed Aircraft Co. in Burbank and in the flight test division of National Advisory Committee for Aeronautics' Langley, Va., laboratory.

Adams received his degree in mechanical engineering from Purdue University in 1942. He has served as a member of the technical advisory board of the Southern Methodist University Foundation for Science and Engineering and as a member of the Fort Worth Chamber of Commerce education committee.

Dooley to Head Space Activity

Dr. Donald A. Dooley, veteran aerospace engineer, has been named vice president—space programs for the Convair division.



Dr. Dooley

In this newly created executive position, Dr. Dooley will be responsible for all space system activities such as the space shuttle and other prams which Convair has been pursuing. He will report to Lyman Josephs, vice president and general manager. His appointment is effective Feb. 9, 1970.

He recently served as chairman of the Department of Defense Space Transportation Systems Working Group and as task

(Continued on Page 4)

QUADRUPLICATE WINNERS—Convair material and launch vehicle programs departments' quarterly Craftsmanship Achievement banners are presented for fourth consecutive times for 1969 to representatives for materials financial program control Dept. 860 (right photo) and Kearny Mesa factory departments (left photo). Material department banner is presented in right photo by H. E. Moose, director of material, front left, to J. M. "Duke" Rogers, manager of material financial and program control. Looking on are chiefs of material program control (from left) Russell Fox, Frank Brown, A. L. "Doc" Dean, Robert Amick, and Ray Quinn. Launch vehicle programs banner is presented in left photo by Don Fagan, manager of KM operations, second from right, to Dick Clark, factory manager. Others, from left, are Bob Franklin, general foreman, engineering test support; Lee Ely, general foreman, Atlas-Centaur assembly; and Jack Klein, general foreman, fabrication.

Log Book Entries

Service Emblems

ELECTRONICS

Service emblems awarded during January.

Twenty-five-year: Dept. 465, R. L. Warner.

Twenty-year: Dept. 617, Mary S. Peters.

Ten-year: Dept. 106, Eva R. Fagan, 712, R. A. Hanggi.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Jan. 23.

Dept. 250, C. M. Antijuntti, R. F. Mutsch, $12.50 each (joint award); 027, H. W. Arnold, $34.60; 985, S. W. Botta, $15; 059, R. L. Brooks, $5,000; 401, D. M. Collins, $56.30; 780, L. E. Cox, $33.50; 141, R. E. Dubel, W. J. Knox, $17.55 each (joint award); 027, E. L. Eppler, $149.90; 250, M. C. Escareno, $31.80; 020, J. S. Feagans, $17; 001, D. Fischer, $34.60; 507, H. M. Fisher, $142.30 (three awards); 578, H. F. Guttmann, $40.60; 835, J. L. Hilton, $25.

Dept. 951, C. L. Holland, $32; 860, W. T. Hudson, $265.40; 843, M. M. Madrid, $26.20; 565, E. V. Mansfield, $1,687.50; 833, J. S. Miranda, $111.70; 810, P. K. Noland, $84.60; 027, L. Peralta, $15; 101, L. L. Piech, $15; 001, H. Powell, $15; 410, D. A. Prentice, $15; 985, P. H. Stephens, $30 (two awards); 149, J. Umland, $15; 027, J. H. Wines, $106.10; 002, A. F. McCoy, $15; 027, R. H. Miller, B. E. O'Brion, $23.10 each (joint award).

Employe Suggestions awards approved for the week ending Jan. 16.

Dept. 142, S. Arimura, $16; 027, W. R. Cashman, $18; 027, W. C. Cropp Jr., H. D. Hill, $7.50 each (joint award); 027, G. L. Dickerson, $27.60; 507, H. M. Fisher, $85 (three awards); 860, J. G. Folchi, $169.70; 130, W. E. Fowler Jr., $15; 020, R. F. Friar, $15; 027, C. D. Harrison, $15.40; 595, R. A. Hayward, $68; 027, J. J. Ignowski, $82; 141, W. J. Knox, $225.40; 059, T. M. LaGamma, $25; 507, W. F. Lindquist, $15.

Dept. 144, W. G. Lux, $15; 454, G. W. Lyst, $15; 566, C. W. Marsh, $15; 001, J. A. Pinson, 250, T. R. Reid, $7.50 each (joint award); 027, D. R. Noon, $104.70; 250, L. W. Poff, $45.10; 027, R. R. Ponchetti, $40.70; 566, A. A. Rose, $15; 027, F. J. Serio, 027, G. R. Simpson, $60 each (joint award); 045, N. L. Sherman, $17.60; 832, L. S. Sidock, $15; 027, G. R. Simpson, $15; 810, P. J. Slater, $145.30; 553, J. Slattery, $1,337.60; 507, T. C. Stark, $15; 131, F. L. Thames, $15; 149, H. R. Van Hoose, $15; 780, S. W. Zeiss, $55.30.

Papers Presented

CONVAIR

CAMPBELL—M. D., J. F. HASKINS, Dept. 572. "Correlation of Residual Strength of Ballistically Damaged Panels with Fracture Toughness Theory." Air Force Conference on Fatigue & Fracture of Aircraft Structures and Materials, Miami Beach, Florida, Dec. 15-18.

JIRAUCH—Dorthea H., Dept. 595, "Digital System Design Simulation Techniques." Coins—69, Computer Information Science, Bal Harbour, Florida, Dec. 18-20.

Rider-Driver

CONVAIR

RIDE WANTED—Country club, area, Chula Vista, near Hilltop and L, to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Call John Oakley, ext. 1411 LF.

RIDE WANTED—From Lemon Grove, Mt. Vernon & Main Sts., to Lindbergh Field plant, 7 a.m. - 3:30 p.m. shift. Call Mike Irvine, ext. 1715 LF or (home) 463-4952.

Lost & Found

CONVAIR

LOST—Timex Electric watch (keepsake), outside Plant 19, Jan. 15. Phone M. E. Howell, ext. 421 LF or (home) 274-6697.

Retirements

CONVAIR

BRADLEY—William H., Dept. 146-5. Seniority date Oct. 16, 1956, retired Dec. 31.

COOPER—John H., Dept. 131-1. Seniority date Aug. 17, 1942, retired Jan. 2.

FISHER—Wallace G., Dept. 954-2. Seniority date Feb. 1, 1940, retired Jan. 2.

GRIJALVA—Peter F., Dept. 840-0. Seniority date Sept. 8, 1936, retired Jan. 9.

JOHNSON—Anna F., Dept. 524-2. Seniority date Oct. 2, 1958, retired Jan. 9.

TORRES—Louis, Dept. 131-0. Seniority date March 13, 1947, retired Dec. 19, 1964.

WITT—Robert L., Dept. 979-1. Seniority date March 12, 1959, retired Nov. 11.

Invention Disclosures

CONVAIR

BARTLE—E. R. Jr., E. A. MESKSTROTH, Dept. 596. Improved Salinometer.

MOORE—R. E., E. R. WOODS, Dept. 550. Thin Film Broadband Matrix Switch. A Dissipative Enclosure for "RF" Environmental Control. High Performance Fluidic Ball Contact. (Three inventions)

ROGERS—S., Dept. 550. Dummy Loading of Matrix Switch.

WEBB—W. W., Dept. 553. Automatic Interface System.

WOODS—E. R., Dept. 550. Crosspoint for Broadband Matrix Switch.

Births

ROBAK—Son, L. Kenneth, 7 lbs. 12 ozs., born Jan. 8, 1970 to Mr. and Mrs. L. K. Robak, Dept. 452-0.

Deaths

CONVAIR

BLUDWORTH—John G., retired Dept. 215, June 1, 1959, died Jan. 16. Survived by his wife, Dora and son.

HAYES—Walter W., retired Dept. 48, June 29, 1962, died Jan. 10. Survived by his wife, Lorene.

OLSON—Lawrence H., Dept. 193-3, died Jan. 23. Survivors include his wife, Doris, brothers John and Sanford, sister, Ester Anderson.

PARMLEY—Arthur, retired June 2, 1961, died Jan. 17. Survivors include his wife, Erma, and 2 grandchildren.

SCHOLER—Fred W., retired May 18, 1968, Dept. 590, died Jan. 15. Survived by his wife, Virginia.

WRIGHT—Arthur W., retired Dept. 732, May 31, 1966, died Jan. 25. Survived by his wife, Dorothy.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

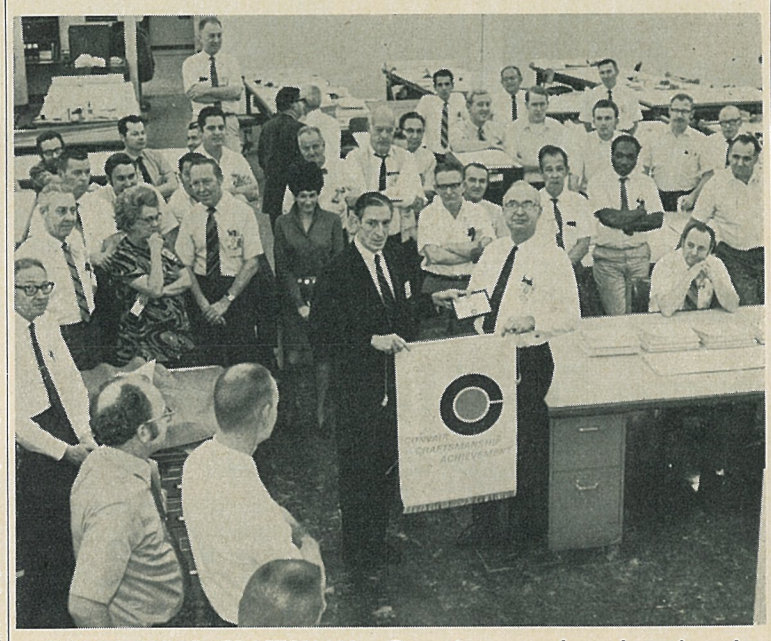
Lewis Reports On 1969 Sales

(Continued from Page 1)

puter-to-microfilm equipment, and the high cost of putting equipment on lease in such an expanding market."

In telecommunications, the Stromberg-Carlson subsidiary recorded increased sales and earnings for the fifth consecutive year, Lewis reported. Stromberg-Carlson, primarily a supplier of telecommunications equipment to the independent telephone industry, had net income of $7.2 million in 1969, compared to $6.3 million in 1968, and sales of $129 million in 1969, compared to $121 million in 1968.

Directors of General Dynamics declared a regular quarterly dividend of 25 cents per common share, payable March 10, 1970, to stockholders of record Feb. 10, 1970.



ENGINEERING CRAFTSMAN—Convair research and engineering department's Craftsmanship Achievement banner for fourth quarter went to employes in structural design Depts. 511 and 512. Receiving banner from F. D. Applegate, director of product design, front left, is S. W. Swenson, assistant design engineer-structures. Section was cited for its efforts in reducing errors on engineering drawings and toward budget and cost reduction goals.

Convair Depts. Receive Awards For Sustaining Craftsmanship

Convair Craftsmanship Sustained Performance certificates were presented to 21 departments by Convair President Jack L. Bowers at his quarterly supervisors meeting last month.

The certificates were to recognize departments that "substantially exceeded their sustaining goals," in the division Craftsmanship program.

Bowers said their performance was very likely the key to the division winning the Air Force Sustained Craftsmanship Performance Award, a major division objective.

Men accepting certificates, their departments and goal performance were:

Russ David, Dept. 002, exceeded goal by 45.7 per cent; Stanley Krebs, Dept. 015, exceeded goal by 12.4 per cent; Bob Ratliff, Dept. 016, exceeded goal by 51.1 per cent; Willie Martin, Dept. 031, exceeded goal by 50 per cent; Ben McMicken, Dept. 045, exceeded goal by 40.6 per cent; Al Oehler, Dept. 049, exceeded goal by 65.9 per cent; Joe Williamson, Dept. 401, exceeded goal by 46.2 per cent; Lance Elmstrom, Dept. 518-0, exceeded goal by 19.6 per cent; Joe Merk, Dept. 759-0, exceeded goal by 48.5 per cent; Jinx Janssen, Dept. 833-2, exceeded goal by 7.4 per cent; Don Berhow, Dept. 840-LF, exceeded goal by 47.6 per cent.

Jerry Nuss, Dept. 420-0, exceeded goal by 41.2 per cent; Jim Schiller, Dept. 732-0, exceeded goal by 29.8 per cent; Lee Ely, Dept. 761-0, exceeded goal by 58.7 per cent; Gunner Gattermen, Dept. 780-1, exceeded goal by 22 per cent; Dick Blommer (three departments), 780-2, exceeded goal by 60 per cent; 780-3, equalled established goal, 780-5, exceeded goal by 40.6 per cent; Bill Barth (two department), 780-4, exceeded goal by 69 per cent, 780-6, exceeded goal by 28.7 per cent; Art Ratz, Dept. 840-KM, exceeded goal by 48.4 per cent.

18 Centaur Engines Will Be Produced

NASA has awarded a letter contract to the Florida Research and Development Center of Pratt & Whitney Aircraft to begin work on building and testing 18 RL-10 engines.

The engines will be used on the Centaur launch vehicle. Two RL-10s, each producing 15,000 pounds of thrust, power the Centaur rocket.

Club to Hear 'What to Do'

"What to do until the psychologist comes" will be described by Dr. Mario F. Conforti at a Convair Management Club "ladies night" dinner meeting Tuesday (Feb. 10) in the Catamaran Hotel.

Conforti, a psychologist and marriage counselor, is executive assistant for the PRIDE (personal responsibility in daily effort) program for the Autonetics division of North American Rockwell Corp. He holds degrees from Wisconsin State Teachers College, Michigan State University, and Denver University.

A no-host social hour is scheduled at 5:15 p.m. and the chicken dinner will be served at 6. Tickets are $4 and are available through Management Club boosters.

The meeting will be sponsored by the research and engineering department. Proceeds from a raffle will go to the Management Club scholarship fund.

David Forest Selected for Design Award

(Continued from Page 1)

Shipbuilding; John R. Burnett, Dept. 592-0, gravity sensitivity assessment criteria study; Henry W. Callihan, Dept. 532-0, thrust deflection device for jet engines; Jack L. Christian, Dept. 572-1, development of improved aluminum boron composite materials; Clay Dennis, Dept. 979-1, improved flight test schedule for Mariner; L. J. Everts, Dept. 979-6, tube flaring problem resolution report.

W. C. Hansen, Dept. 562-3, development of improved Centaur approved parts list; Ed T. Hansard, Dept. 587-0, revisions to design concepts of DC-10 fuselage resulting in weight savings and improved product performance; Roy F. Holmes, Dept. 592-0, design, development and demonstration of a carbon dioxide reduction unit using Bosch Reaction; H. R. Jewett, Dept. 962-3, air conditioning disconnect assembly-design for OAO vehicles; G. C. Krumweide, E. H. Christensen, Dept. 988-1; R. F. O'Neill, Dept. 966-3, liquid hydrogen tank solar radiation shield for Improved Centaur; James W. Mildice, Dept. 989-2, weld energy monitor and controller; W. T. Myers, Dept. 531-2, water sealed landing mat development; Ben A. Penners, Dept. 553-1, computer controlled ground test equipment; Ralph Qualls, Dept. 588-0, DC-10 fuselage section weight control; James E. Whiston, Dept. 511-8, DC-10 fuselage section design management and CRPs.

Forest first joined Convair in 1961 and worked on AGE for Atlas and Centaur and AGE proposal activity for Saturn, Apollo, RIFT, and Nova, programs. He left Convair in 1962 but returned in 1963. Since then he has worked on SLV-3 structural design, OAO nose fairing, OV1, advanced LVP applications, Beryllium truss structures IRAD, space communications proposals and aluminum boron composites.

He has a degree in mechanical engineering from Southern Methodist University.

Disabled Children Receive Expanded Insurance Coverage

Dependent medical insurance coverage for permanently and totally disabled children has been expanded for salaried employes effective Jan. 1, and will be extended to include hourly employes effective March 31.

Under the new coverage, permanently and totally disabled dependent children will be covered by dependent insurance after they reach age 21 provided their disability commenced prior to age 21 and provided they were a dependent of an employe at the time of the disability and covered by dependent insurance.

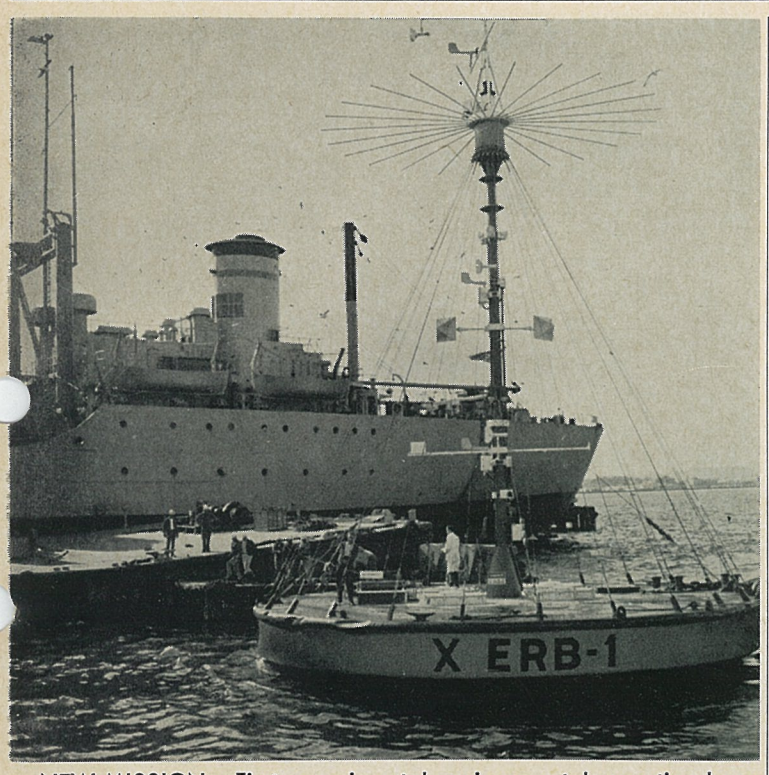
An employe who has a permanently and totally disabled dependent child and lost his dependent coverage because of the age 21 limitation will have insurance claims paid as of the effective dates.

Paul Allgire, supervisor of employe benefits, said employes affected by the new coverage must notify employe benefits when their child reaches age 21. In addition, Allgire said, if dependent coverage has been dropped for an employe because of the age 21 limitation, the employe should notify employe benefits to obtain restoration.

For information, call employe benefits, ext. 2657 KM or 1931 LF.

TRACK MEET TICKETS

Reduced-price tickets for the AAU indoor track meet to be held Friday, Feb. 20, at San Diego International Sports Arena are on sale at $2 and $4 (a $1 saving) at CRA and employe benefits outlets. First event in the meet is scheduled at 6:30 p.m.



NEW MISSION—First experimental environmental reporting buoy is prepared by Convair division personnel for loading aboard USNS Marine Fiddler (background) for shipment to Norfolk, Va. Buoy formerly saw service in Pacific as ocean data station Bravo.

Bravo Taking Station As Weather Monitor

Convair division's former ocean data station Bravo, now on loan from the Office of Naval Research to the U. S. Coast Guard, has been redesignated XERB-1 as the first "experimental environmental reporting buoy" for the National Data Buoy Development Project.

It is being moored in the Atlantic Ocean to help the Weather Bureau improve off-shore and U. S. east coast forecasting.

Roy Woodle, Convair project manager for national data buoy systems, said the XERB-1 was scheduled to be on station late last week in the Gulf Stream about 125 miles east of Norfolk, Va., where ocean depth is 10,000 feet.

"The Gulf Stream current in this area has been measured at five knots at the surface and one knot on the bottom," Woodle said. "This is an area where northeast storms apparently gain considerable energy from the ocean."

Adm. Willard J. Smith, Coast Guard commandant, also has announced that the 311-foot cutter Gresham is being reactivated for use in conjunction with the XERB-1 beginning later this month.

The Gresham will be stationed about 180 miles south of Nantucket, Mass., and will carry a four-man Weather Bureau meteorological team to make frequent daily surface and upper-air observations for relay to shore-based forecasters.

Use of the XERB-1 and the Gresham will provide meteorological data for a wide area not now covered by shore-based detection systems.

The Weather Bureau has found that abnormal weather conditions migrate undetected northward along the Atlantic coast. A memorable example was a heavy snow storm that dropped 26 inches of snow on Boston and left much of New England immobilized in February, 1969.

"Advance knowledge of adverse weather is important to the safety and efficiency of private and public transportation," Admiral Smith said. "We can't stop a snow storm, but its impact can be minimized if we know it is coming."

John A. Volpe, U. S. Secretary of Transportation, announced plans for the Coast Guard deployment of XERB-1 and the Gresham last month. Deployment of the vessel was made possible by bipartisan Congressional action which authorized special funds for the Coast Guard for securing additional weather data.

"Transportation is the principal user of weather information," Volpe said. "We are keenly interested in seeing that all possible data is readily available. So I have instructed the Coast Guard to expedite means to provide weather data vital to the nation."

Woodle said the XERB-1 will collect data on air and water temperatures, barometric pressure, winds, dew point, solar radiation, rainfall, and surface currents.

"Water temperature will be measured at 10 points to a depth of 125 meters," he said. "Wave profiles and tension on the mooring line also will be recorded."

Government officials said the XERB-1's use will provide technical information and engineering data important to the National Data Buoy Development Project which the Coast Guard is directing for the federal government.

The project office has responsibility for development of a national capability for deploying and maintaining networks of unmanned automated meteorological and oceanographic buoys in deep ocean waters of the world and in continental shelf and Great Lakes regions of the U. S.

Data from the XERB-1 initially is to be telemetered by high-frequency radio to Convair division's mobile data center at Scripps Institution of Oceanography in La Jolla, Calif. A Coast Guard station in Miami, Fla., later will be equipped for data readout.

Woodle, Ken Jones and Warren Hoover of Convair were in Virginia for deployment of the buoy, which is 40 feet in diameter and weighs 100 tons when ballasted with water on station.

XERB-1 was transported from San Diego to Norfolk via the Panama Canal on the deck of the USNS Marine Fiddler of the Military Sea Transport Service. Hoover was at Norfolk to assist with the unloading Jan. 10.

Convair currently has a contract for production of five large navigational buoys for the Coast Guard. The first is scheduled for delivery in June and the others at two-month intervals.

Salaried Savings Plan Improved; Company Contributions Increased

Significant improvements in the General Dynamics Salaried Savings and Stock Investment Plan — including an increase in company contributions from 50 to 75 per cent of the amount the members save — were approved recently by the Internal Revenue Service.

The changes became effective Jan. 1 and also include provisions for a "special distribution" of funds and various alternatives for distribution at retirement, all subject to approval by the Plan committee.

Each November a member with a vested account now may request a "special distribution" of all or part (in multiples of 10 per cent) of the funds credited to his account at least four years prior to the end of the current year.

Previously, members had available to them only the "short term" distribution option (now called "standard distribution"). Under this option they could elect to withdraw all funds credited to them for the fourth previous Plan year, or to defer withdrawal until retirement etc.

Distribution of units and shares in a member's account now may be made by one of the following alternatives upon retirement (subject to Plan committee approval):

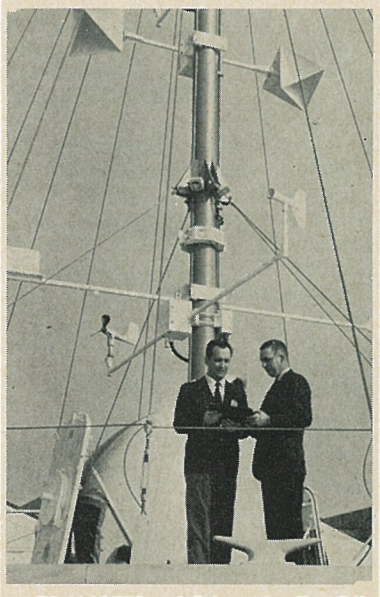
1. Full distribution as soon as practicable.
2. Distribution in up to 15 annual installments.
3. Transfer of total funds to the company retirement fund.
4. Payment to an insurance company to purchase an annuity.

If the distribution is made in annual installments, the member may have the value of his account in the diversified portfolio fund (if applicable) invested in government bonds or may have the value of his company stock invested in the diversified portfolio or in the government bonds fund, or both. The member may direct such transfer only once.

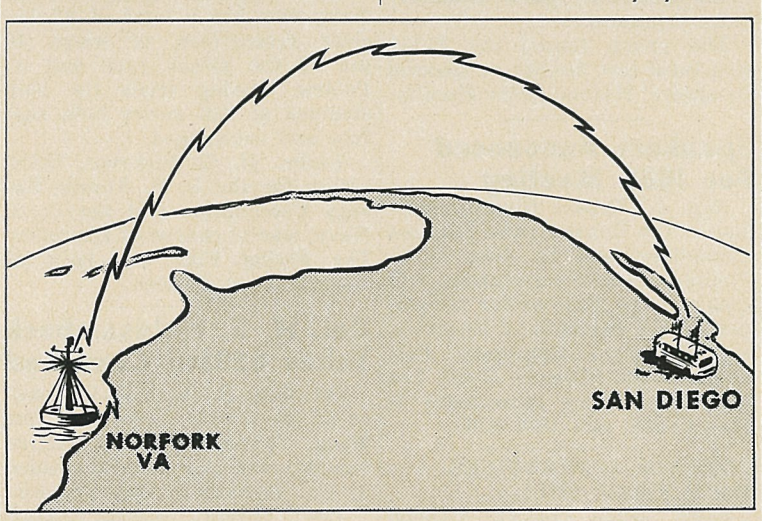
Algie A. Hendrix, Corporate vice president, said the Salaried Savings and Stock Investment Plan has become "one of General Dynamics' most popular benefits" since it was established in 1965.

"With the addition of these improvements, the Plan will contribute even more toward attracting, motivating and retaining qualified employes," he said.

New booklets and letters of explanation of Plan changes are being prepared for distribution to all salaried employes.



TRANSFER—LCdr. M. E. Gilbert of National Data Buoy Development project office, right, signs transfer accepting accountability for XERB-1 for U.S. Coast Guard. At left is Roy Woodle, Convair division project manager for national data buoy systems.



CROSS COUNTRY—Data gathered by XERB-1 will be transmitted to San Diego. Ultimately, there also will be receiving facilities at Coast Guard Station, Miami.

Development Programs Include Harvard Study

Next week, two General Dynamics executives will begin special courses of study at Harvard Graduate School of Business.

Nominated for the 13-week Advanced Management Program (AMP) is Roger W. Brown, vice president-employe and industrial relations, Material Service Corp.

Nominated for the 16-week Program for Management Development (PMD) is Thomas S. Cowan Jr., general superintendent-installation at Quincy Shipbuilding division.

Both were selected from a number of outstanding candidates at various General Dynamics divisions/subsidiaries.

The AMP course is designed for executives in the 37-50 age group with 15 to 20 years experience in high-level positions.

The PMD is programmed for promising executives in the 28 to 36 year group, with five to ten years experience in responsible business positions.

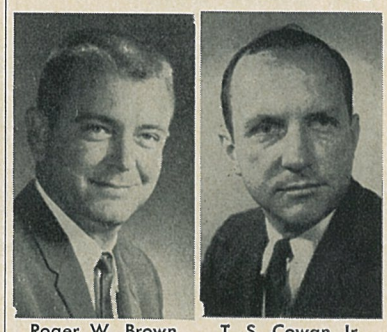
Both programs attract representatives from the cream of U.S. corporations. Concerns are limited to one student each for the two courses. They are offered twice yearly.

GD already has nominated two other executives who will begin duplicate programs this fall.

Brown, a native of Danville, Ill. and graduate of the University of Illinois, joined GD in 1956 following positions with General Motors and North American. After varied staff and executive duties in industrial relations in California and Florida, he was named industrial relations director for Electronics division, Rochester, N.Y., and three years later was called to Corporate Headquarters, New York City, for the better part of a year before assignment as director of industrial relations at Pomona division. In 1967 he was transferred to Chicago to his present post.

Cowan, formerly manager of planning at Quincy Shipbuilding division and since early 1969 general superintendent-installation, is a 1951 Naval Academy graduate and veteran of five years submarine duty. He joined General Dynamics in 1950 at Electric Boat division as a project planner and was chief of master planning when he transferred to Quincy in 1964 as superintendent of planning and scheduling.

General Dynamics has been sending promising executives to Harvard for a decade. Representative graduates of the AMP course of recent years include Tom Worthy, now vice president-customer service for Stromberg-



Roger W. Brown T. S. Cowan Jr.

Carlson, Lyman C. Josephs (late 1969 graduate), now Convair division vice president and general manager, Sam L. Ackerman, vice president and manager, Dynatronics operation, Electronics division, Lawrence E. Spear, Pomona division vice president-plans and programs.

Harvard defines the AMP programs as "designed for mature men of notable promise and growing capacity . . . to provide (them), after they have reached or closely approached the general policy-making management level . . . with an opportunity to enhance their qualifications for top-level positions . . ."

Regarding PMD, Harvard states the program is aimed at the young executive emerging into positions of administrative responsibility, to prepare him for major roles in management.

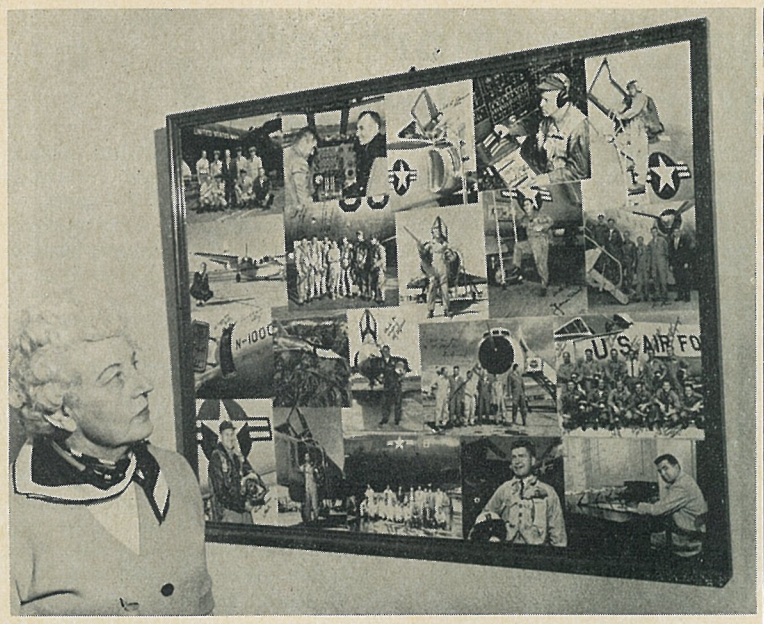
"The complexities of business management have multiplied sharply. Decentralized or not, corporations have had to disperse responsibility for decision-making across a broader base of managerial personnel. Today's chief executive delegates authority. He selects able men . . . and holds them responsible for results. Business success then depends on the ability of the men at the top to develop the managerial corps in depth."

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

ROBERT M. SMITH (1958) from Corporate Headquarters to director of industrial relations, Quincy Shipbuilding division, replacing **JAMES L. BUDROS** (1942) who will rejoin Corporate Headquarters; **JOSEPH W. MONACO** (1966) from Convair to Fort Worth; **GEORGE W. BROWN JR.** (1961) from Convair to Fort Worth; **MICHAEL J. KNOP** from Electric Boat to Electronics (Electro Dynamic) as senior project engineer; **SAMUEL I. ENGELMAN** (1959) from Convair to Stromberg DatagraphiX as senior quality assurance administrator; **LAWRENCE H. WAY** (1963) from Corporate Headquarters to manager of financial planning, DatagraphiX; **DONALD P. BENDER** (1967) from Convair to Fort Worth; **CHARLES E. HISAW** (1954) from DatagraphiX to Electronics-SD as manufacturing development engineer; **GREEN A. KIMBALL** (1964) from Convair to Fort Worth; **FRANK D. CRAIG** (1951) from Pomona to Corporate Headquarters; **ELWOOD D. LEARN** (1962) from Pomona to Quincy Shipbuilding as manager of industrial security; **WALTER J. JANKOWSKI** (1957) from Convair to Fort Worth; **DAVID M. FESTA** (1967) from Electronics-SD to director of management systems, Material Services; **DONALD N. HARRIS** (1959) from Fort Worth to security officer, Pomona; **HOMER M. WILLIAMS** (1956) from Convair to configuration management specialist, Electronics-SD; **JOSEPH L. GALLANT** (1956) from Convair to Fort Worth; **JAMES WHEELER**, from DatagraphiX to Convair as engineering illustrator; **EARL S. FOWLKES** (1951) from Pomona to senior quality control engineer, Fort Worth; **HARVEY D. BOOTH** (1950) from Convair to Fort Worth.



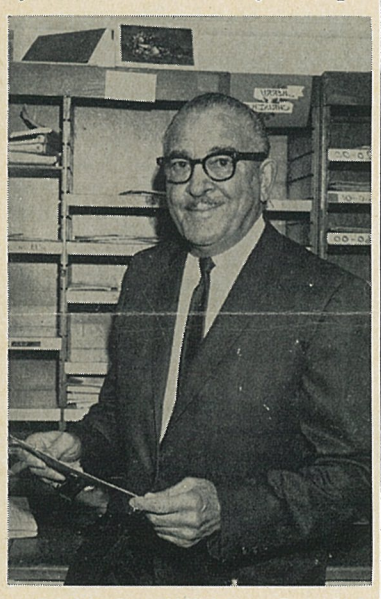
TEST PILOTS—Mrs. Norma Buell looks over autographed pictures Convair test pilots gave her during 22 years as secretary to medical director. Mrs. Buell recently retired after 30 years with Convair.

For Uncle Sam

Veteran Plant Mailman Recalls Special Deliveries by Muleback

If anyone, anywhere, has been "delivering the mail" longer than I. F. "Ike" Rollins, Convair division Dept. 170-8, let him come forward.

"My father was postmaster in this little town in Louisiana, near Shreveport. The town was named Rollins, I guess because the Rollins family constituted a majority. When I was a boy I helped



RAIN OR SHINE — Convair's "senior mailman" is Ike Rollins, who joined division in 1942.

sort the mail along with my brothers and sisters, worked in my father's store and did some hoeing on our 1,300 acres of farmland.

"A Special Delivery letter was an occasion in those days. We competed for the assignment. The lucky one did his duty — usually by mule! — with all the dedication of carrying a message to Garcia."

Rollins joined Convair in 1942 and most of his duty has been in plant mailrooms. In point of continuous service he is probably the division's most senior mailman. The individual pieces of mail he has handled run into the hundreds of thousands.

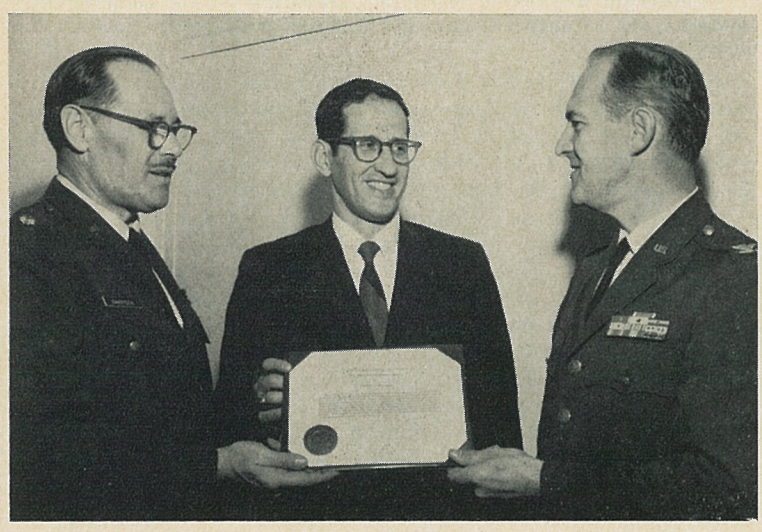
By education, Rollins should be teaching. A 1927 graduate of Wylie College, Marshall, Texas, and only nine units short of his master's (physical education), he was an elementary school principal for ten years.

"I taught, briefly, when I first came to San Diego, but grading all those papers at night was too much to face."

Rollins and his wife (she is a graduate of Wilberforce University, Ohio, and a former high school English teacher) have two daughters, both college trained. The oldest, Lois Anita, 25, is married to a teacher and lives in Altadena. She has had an interesting career. As a talented dancer she toured the world as a member of the Katherine Dunn troupe before deciding she had had enough of living out of a suitcase. Of all things, she now is a deputy in the Los Angeles Sheriff's Department, with the rank of sergeant, specializing in recruiting and public relations.

The other daughter, Mary 21, is a senior at UCLA (on the dean's list no less!) and will graduate in June and continue her studies toward a master's in sociology to prepare for a career in social service.

"Too often nowadays we regard a college education as merely a requirement for business advancement," Rollins confided. "That is not the real benefit, in my opinion. It is more a matter of making the individual aware of the beauties of the arts and sciences, of broadening his viewpoint and thereby making life more enjoyable, as well as productive."



AWARD—Major Marvin G. Spallina, USAF, center, holds citation accompanying Meritorious Service Medal he was awarded recently. Left is Lt. Col. Joseph B. Garrison, USAF, head of Defense Contract Administration Services Office at Convair. Right is Col. Charles F. Merz, San Diego DCAS District Commander, Maj. Spallina is currently stationed at Convair with AF Education-with-Industry program. He received medal for "outstanding service" as chief, Procurement Division, 23rd Combat Support Group, from July 23, 1964 to Aug. 1, 1969.

Apprentices Receive Badge Attachments Indicating 'Rank'

Convair division apprentices and apprenticeship program graduates are sporting new badge attachments to indicate their level of accomplishment in the program.

Attachments are green for first-year apprentices, orange for second-year, black for third-year, red for fourth-year, and blue for graduates.

Graduates who have not yet received their clip-on badge attachments may obtain them by calling Wayne Turner, apprenticeship program coordinator, ext. 2564 LF.

Brown badge attachments also will be used to designate members and alternate members of the Joint Apprenticeship Committee. They are Jack Croft, Dept. 130-3; Marty Stutz, 407-0; Henry Mohr, 001-0; Robert Neaves, 403-3; Walter Herchold, 731-0; Fred DeGreef, 401-5; Richard Johnson, 451-0; Al Cruz Jr., 401-1; Robert McKellips, 780-4, and John Williams, 407-0.

Convair currently has 32 employes enrolled in machinist, tool and die, jig and fixtures, plaster pattern, calibration, electronics, and inspection apprenticeships.

The apprenticeship program is sponsored by Convair and the International Association of Machinists in cooperation with the San Diego Community Colleges.

Dooley to Head Space Activity

(Continued from Page 1)

group manager of the DOD/NASA Space Transportation System Study Group.

Dr. Dooley was formerly vice president and associate general manager of the Aerospace Corp's. systems engineering operations and has acted as general manager of the vehicle systems division.

At Aerospace, he led the Titan III program from its concept through early ground testing. In 1965, he received the Air Force Systems Command Award for outstanding achievement for his accomplishments with the Titan III and advanced ballistic missile development.

Prior to joining Aerospace, he had been with Space Technology Laboratories (now TRW Systems Group), Aeronautics division of the Philco Corp., University of Michigan, North American Aviation, and Jet Propulsion Laboratory.

AF Advisory Group Hears Jensen, Nau

The industry advisory group of the Air Force Aircraft Structural Integrity Program met at Convair division last month for two days of workshops, presentations, and tours.

Reports on structural integrity from NASA, the Air Force, and industry were reviewed.

J. E. Jensen of Convair's Dept. 587-0 made a presentation on "aircraft wing structural concepts with improved ballistic damage tolerance." R. A. Nau of Dept. 581-5 discussed space transportation systems.

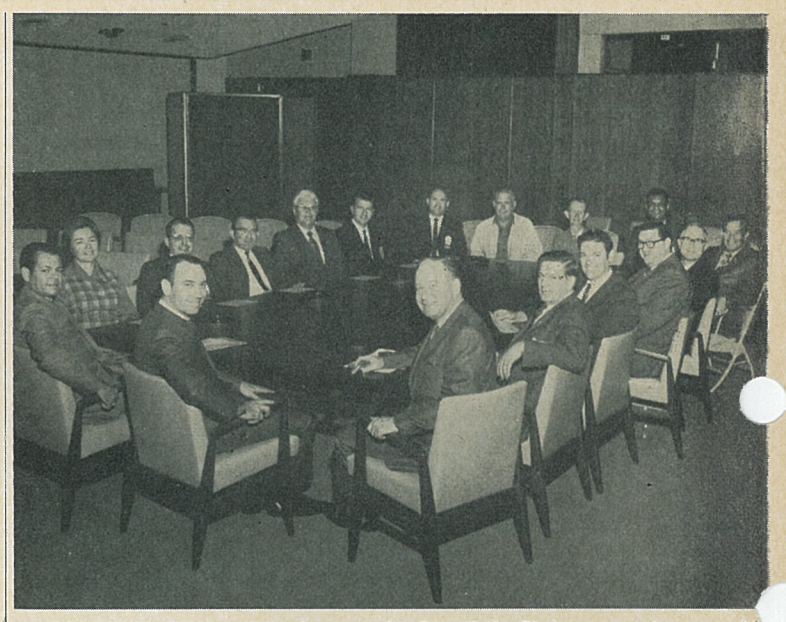
The group toured the F-111 structural test facility at General Dynamics' Harbor Drive Facility.

Speakers Announced For IEEE Meeting

Rep. L. Mendel Rivers, chairman of the House Armed Services Committee, and Lt. Gen. S. C. Phillips, SAMSO commander, will speak at the 11th winter convention of the Institute of Electrical and Electronic Engineers, Feb. 10-12, at the Biltmore Hotel, Los Angeles. Convair coordinator is Jean Cooke, ext. 1836 KM.

CONVAIR APPRENTICES TOUR STEEL MILL

Forty seven Convair division apprentices and guests toured the Kaiser Steel mill in Fontana, Calif., Jan. 23.



CON-TRIB-CLUB—Members of Con-Trib-Club committee with Leonard Zanville, center foreground, vice-chairman of 1969 United Crusade, after Zanville presented certificates of appreciation to group. Clockwise from Mary Martin, left, are Howard French and Angelo Cali, representing IAM; Dean Strange, Convair; Jess Cook, Convair Management Club; Harry Black, IAM alternate; Robert Richards, IUOE; Ernie Larson, IBEW; Henry Fuller, Convair; Del Dimmitt, Convair drive coordinator; Jack Benedict, Convair Management Club alternate; Willard Brassell, EAA; Marv Holmberg, Convair Management Club; Robert Fitzgerald, IAM alternate, Zanville; Paul Allgire, committee chairman; and Roger Brown, manager of compensation.

Convair Men Get 'Gold Stars' For Outstanding Work on DC-10

More than one hundred Convair division men have received Gold Star awards for outstanding personal contributions to the DC-10 fuselage program since the

HONORED — Jim Whiston, right, receives commendation letter and fourth "Gold Star" award from Jack Hurt, DC-10 program manager.

awards were instituted in July by Jack Hurt, DC-10 program manager.

James E. Whiston, DC-10 structures group engineer in Dept. 511-8, recently became the first to receive four of the awards. One was for "outstanding and extraordinary effort and excellence" in directing DC-10 engineering design tasks. The other three were for suggestions or cost avoidance totaling $370,000.

The small Gold Stars on a blue plastic background are affixed to plastic employe badge attachments imprinted with a DC-10 insignia.

Hurt said they give "visible evidence and recognition" of outstanding individual performance or for accepted cost avoidance suggestions on the DC-10 program.

"These suggestions have run the gamut from $600 to $1.5 million," he said.

The 1.5 million cost avoidance originated from a suggestion by D. L. Greer, E. T. Hansard and J. W. Levine.

"Contributions like this represent the kind of originality and initiative important to the success of the DC-10 program," Hurt commented.

Flying Fish Passes First Test at Sea

The nuclear attack submarine USS Flying Fish successfully completed her first sea trials last month. With the Flying Fish the Navy now has a total of 87 nuclear submarines, of which 46 are of the attack type and 41 Polaris. During trials the ship steamed at full power both surface and submerged.

VAdm. H. G. Rickover, USN, acting for the U. S. Atomic Energy Commission and the U. S. Navy, was in charge of the trials. The Flying Fish was built at Electric Boat division.

Col. H. S. Holdsambeck Takes 6595th Command

Col. Otto R. Haney, commander of the 6595th Aerospace Test Wing, Vandenberg AFB, retired recently and has been succeeded by Col. Herbert S. Holdsambeck.

The 6595th directs Atlas launches in the Advanced Ballistic Re-entry Systems (ABRES) program.

Cost Reduction At $21 Million

More than $21 million in savings were realized last year through the Convair division cost reduction program.

In the Employe Suggestion portion of the program, $123,699 was awarded to employes for suggestions which saved $1,185,700. Employes submitted a total of 5,682 suggestions and there were 1,842 awards. Awards averaged $72.

In the Value Control Project (VCP) program, 125 VCPs were implemented and validated with savings of $10.1 million. Cost Reduction Projects (CRP) saved $10.5 million in 523 implemented and validated projects.

In addition, 48 Value Engineering Change Proposals (VECP) were submitted to customers and 42 received customer approval. The savings realized are incorporated in the VCP and CRP totals. Through customer approvals of the VECPs, Convair achieved $440,000 in incentive awards.

Next Deadline Near For Savings Plan

General Dynamics employes are reminded that Feb. 28 is the next deadline for enrolling or making changes in the General Dynamics Savings and Stock Investment Plan. Applications made in February will become effective at the start of the second calendar quarter on April 1.

Employes with a year's service or more may enroll 30 days prior to beginning of any calendar year. The same deadlines apply to making changes in existing individual plans.

Underdogs, Underbrush Lead In First-Half Hoop Standings

Underdogs and Underbrush climbed out from under in the CRA slow-break and fast-break basketball leagues to gain top standings at the end of the first half of the season.

The slow-break Underdogs were in third place two weeks ago but won two straight to make the top spot while the Plant 19 All Stars dropped two to slide into second place.

In the fast-break league, the same performance was repeated as third place Underbrush took two straight to tie for first with Aero.

Standings after five weeks of play are:

SLOW BREAK

Team	Won	Lost
Underdogs	4	1
Plant 19 All Stars	3	2
GASP	3	2
SD Mod Center	3	2
Net Jets	2	3
Reproducers	0	5

FAST BREAK

Underbrush	4	1
Aero	4	1
DatagraphiX	3	2
Tool Control	2	3
Cosmo Bums	2	3
Hot Shots	0	5

Bowling Finals Set Next Month

The 29th annual CRA championship bowling tournament will be at the Pacific Recreation lanes March 7-8 and 14-15.

The first weekend will be for team events and the second for singles and doubles bowling. Deadline for entering is Feb. 20.

The tournament is open to all Convair and Electronics-SD employes and members of their immediate families. Champions will be selected in men's and mixed team events, men's and women's singles, men's and mixed doubles, and men's and women's all-events.

Handicaps will be based on 1969 book averages. If no official average is available, current highest average of 21 games or more will be accepted or an assumed average of 200 for men and 180 for women can be used. Maximum team averages will be 855; maximum doubles, 370.

Five sanctioned bowlers may form a team and enter without additional payment of membership dues. Bowlers may enter only in doubles and singles and mixed team or mixed doubles. Doubles only and singles only will not be accepted. All women's teams will compete in the mixed division.

Fees are $3 per person for all except for those bowling in all-events categories, which entail $1 additional charge. Entry forms are available at all bowling alleys with CRA sanctioned play, CRA Clubhouse, and employe benefits outlets.

CRA bowling commissioners Mike Brooks and Jim Hayman are directing the tournament. They may be reached for further information at ext. 581 LF.

Net 75 and 73 Win In Women's Golf

First place trophies in General Dynamics Women's Golf Club's January tourney at Las Penasquitos links were won by Mabel Humphries (flight A), net 75, and May Dean Schell (flight B), net 73.

Second place honors and merchandise certificates went to Freda Magargal (flight A), net 77, and Dorothy Johnston (flight B), net 75.

The club's next match play is slated Feb. 14 at Mission Bay Golf Club with a tee off time of 8:30 a.m.

Typewriter Sale Bids Close Feb. 10

Twenty typewriters and calculators are being offered for sale on a single-item, sealed-bid basis by the Convair material sales department.

Bid forms may be picked up at salvage yard offices at Lindbergh Field and Kearny Mesa. Bids will close Feb. 10. The typewriters and calculators are available for inspection at the Lindbergh Field salvage yard.

SPACE CONGRESS DATE ANNOUNCED

The seventh annual Space Congress will convene April 22-24 in Cocoa Beach, Fla. Convair coordinator is Buster Carlson, ext. 1836 KM.

Evening College Adds Courses

Two additional afternoon San Diego Evening College spring semester courses have been scheduled for second-shift employes at Lindbergh Field beginning next week.

Industrial Blueprint Reading will be given 12:15 to 3:15 p.m. Tuesdays. Shop Math will be offered 12:15 to 3:15 p.m. Wednesdays. Both will be taught by Gerry Peters.

Other Evening College courses at Lindbergh Field will be Introduction to Supervision, Personnel Administration, and Shop Math 40 on Mondays; Human Relations 1 and Management and Organization on Tuesdays; Human Relations 2, Effective Speaking, and Production Planning on Wednesdays; and Advanced Industrial Economics, Industrial Blueprint Reading, and First Aid on Thursdays. All will be given 4 to 7 p.m. except First Aid, which meets 4 to 5:30.

Offered at Air Force Plant 19 will be Industrial Blueprint Reading on Tuesdays and Introduction to Supervision on Wednesdays. Both meet 4 to 7 p.m.

Scheduled at the Kearny Mesa plant are two courses in Electronic Drawings and Circuit Schematics, one 4:30 to 7 p.m. Mondays and the other 1:45 to 4:15 p.m. Tuesdays; and Supervision and Management of Safety Programs, 4:30 to 7 p.m. Mondays and Wednesdays.

Preregister by calling Diane Moore at educational services, ext. 2564 LF. Official registration will be at the first class meeting. Only cost is a $1.50 student activity fee.

Club Plans Trip To Dog Races

Tickets for Convair Management Club's night at the Caliente greyhound races are on sale for $3.50 from club boosters.

The event is scheduled Saturday, Feb. 14. Included are two Margarita cocktails, dinner, and free transportation to and from the border.

Dinner will be served at 7:30 p.m. in the clubhouse and will include salad, carne asada with Mexican side dishes, dessert, rolls, coffee, and wine.

Buses will leave the Mexican side of the border at 6:45 p.m. and will leave Caliente at 11 p.m. for the return trip.

Coat and tie will be required for men. Women will not be admitted in slacks. Children are welcome but must pay the full ticket price.

Chairman for the event is Mike Alianelli, ext. 1177 KM.

Porsche Race Film Set for Meeting

A film of the Porsche race team capturing its C-production championship will be featured at the CRA Sports Car Club meeting at 7:30 p.m. Feb. 11 in the CRA Clubhouse.

Milt Minter, Porsche 1969 SCCA champion driver from Los Angeles, will attend and answer questions.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 111 Kearny Mesa. Deadline for next issue of GD/NEWS is Feb. 10. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhose unless otherwise noted.)

★ ★ ★

ADVENTURERS — Meeting Feb. 18, 7:30 p.m. Three-day (George Washington weekend) camp / backpack hike through Carrizo Canyon to Dos Cabezas (8 miles north of Jacumba), Feb. 21-23.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BALLROOM DANCING—Intermediate dance class now meeting Monday evenings, 7:30 p.m. New members are welcome.

BICYCLE CLUB — Moonlight Dinner Ride, 6:30 p.m., Feb. 14. Meet Del Mar Plaza Shopping Center, Del Mar.

BONAIR FLYERS—Meeting Feb. 5, 7:30 p.m.

BRIDGE — Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB—Meeting Feb. 15, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS — Meet Tuesdays and Thursdays, 9 a.m.-noon and 7-10 p.m.

CHORUS—Rehearsals Mondays, 7:30 p.m.

COINEERS—Meeting Feb. 9, 8 p.m.

COUNTRY AND WESTERN MUSIC —Meet each Thursday, 7:30 p.m., CRA Missile Park picnic shelter.

DELTA DIVERS—Meeting Feb. 11, 7:30 p.m.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB—Potluck, 6:30 p.m., meeting, 7:30 p.m., Feb. 17, 7:30 p.m., Gillespie Field Clubhouse.

GARDEN CLUB — Meeting tonight (Feb. 4), 7:30 p.m., Floral Association Bldg., Balboa Park.

HEALTH CLUB—Open 9:30 a.m.-10 p.m. Monday through Thursday; 9:30 a.m. - 9 p.m. Fridays; 10 a.m. - 5 p.m. Saturdays; "Women only" weekdays, 9:30 a.m. - 11 a.m.

HI-FI MUSIC—Meeting Feb. 10, 7:30 p.m.

ICE SKATING — Big Bear winter weekend, March 6-8. Reservations are now being accepted. GD family skate night each Thursday, 6:15-7:45 p.m. House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1.00 (includes skates).

JUNIOR SCIENCE — Workshop Feb. 20, 7:30 p.m.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Wednesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Shoot Feb. 8, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB—Meeting Feb. 5, 7:30 p.m.

RIDING CLUB — Senior and junior riding instructions to start March 1, Registration deadline Feb. 20. Meeting Feb. 11, 7:30 p.m.

RIFLE CLUB—Senior shoot Feb. 11, 7 p.m. Junior shoot Feb. 7, 9 a.m. Gillespie Field Range.

ROCKHOUNDS — Meeting Feb. 11, 7:30 p.m.

ROLLER SKATING—GD family night Feb. 16, 6:30-9:30 p.m. at Skateland, Front & G Sts. Tickets at employe Benefits outlets.

SCULPTURE — Workshop sessions Mondays, 7:30 - 10:30 p.m.

SKI CLUB—Sun Valley ski trip, Feb. 27 - March 8.

SPORTS CAR CLUB—Meeting Feb. 11, 7:30 p.m.

SQUARE DANCE—Dance Thursday, 8-10 p.m.

STAMP CLUB—Meeting Feb. 12, 7 p.m.

SWIMMING—GD family swim night, Feb. 21, 7-9 p.m., Mission Beach Plunge. Tickets at employe benefits outlets.

TABLE TENNIS — Friday night league, 7:30 p.m. Play Saturdays, 10 a.m. - 4 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamic Toastmasters No. 457, Thursdays, 5:30 p.m.

TOURS—European tour, May 3.

TROPICAL FISH—Meeting and workshop Feb. 16, 7:30 p.m.

WIVES CLUB — Sweetheart potluck dinner, 6:30 p.m., Feb. 14.

WOMENS GOLF—Mission Bay tournament, Feb. 14, 8:30 a.m.

Wives Schedule Valentine Dinner

CRA Wives Club will hold a "sweetheart potluck" at 6:30 p.m. Saturday, Feb. 14 in CRA Clubhouse.

All Convair wives and their husbands are invited. Wives should bring a covered potluck dish and their own table service.

There will be games and prizes. For information call Mrs. Doris Browning, club president, 295-5369.

Coineers Hear Pond At Scout Meeting

A. R. Pond of the Convair DCAS Office was main speaker at the CRA Coineers' Scout Night last month.

Sixty scouts and 10 scout leaders represented two Cub Packs, two Girl Scout troops, 10 Boy Scout troops, and an Explorer post. Pond spoke on the coin collecting merit badge.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

FLEET OF FOOT—Members of CRA 1,000-Mile Club hold plaques attesting to running 1,000 miles or more during 1969. Plaques were presented by Ralph Mansfield, left, health club director. Wayne Groesbeck, right, also received trophy as 1969 outstanding runner. From left are Mansfield, James Steele, D. A. Buck, Lane Cowgill, Karl Kachigan, Bill Black, and Groesbeck. To win trophy Groesbeck ran in several competitive events including 26-mile marathon in 3 hours, 23 minutes.

Ice Skating Club Leases Lodge For 17th Weekend at Big Bear

CRA Ice Skating Club has leased Wawona Lodge March 6-8 for its 17th annual winter weekend at Big Bear Lake. The lodge has 10 rooms (with baths) for groups of two to 5 and 18 cabins for family groups of up to 12.

The weekend "package" will cover two nights lodging, Saturday and Sunday breakfasts, Saturday dinner, and the group's traditional pizza party.

Cost will be $15, children under eight at half price. Those participating must arrange their own transportation.

No formal activities are scheduled but facilities are available for all types of winter sports. Meals will be professionally prepared and served with volunteer assistance from the group.

Reservations are being accepted at employe benefits outlets and CRA Clubhouse. For additional information call June Reiger, ext. 1111 KM; Bud Davies, ext. 2844 KM; or Joan Kosen, 274-5227.

Riding Lesson Series Slated

Senior and junior riding instruction will be sponsored by CRA Riding Club at Bradley Stables, Bonita, beginning March 1.

The courses are open to all General Dynamics employes and their families. Classes for beginner and intermediate western riders will run eight weeks.

Cost will be $22 and will include membership in the Bonita Farms Riding Club. Applications are available at all CRA and employe benefits outlets. Registration deadline is Feb. 20.

For information call Len Sidock, ext. 1757 KM or 291-0439.

Bike Club Planning Ride in Moonlight

CRA Bicycle Club plans a special "moonlight dinner ride" Valentine's Day.

The ride will begin at 6:30 p.m. Saturday, Feb. 14, from the Del Mar Plaza Shopping Center, Del Mar, and proceed to the Viking Restaurant, Rancho Santa Fe, for dinner.

The ride will cover about six miles each way. Bicycles must have white lights in front and red reflectors in back. Ride leader is Dick Gilbert, 223-8848.

Swimming, Skating Tickets Available

CRA and employe benefits outlets have tickets for swimming and roller skating one night each month. Cost is five cents and tickets are limited to employes and members of their families.

Swimming is 7 to 9 p.m. the third Saturday each month at Mission Beach Plunge beginning Feb. 21. Roller skating is 6:30 to 9:30 p.m. the third Monday each month at Skateland beginning Feb. 16.

Sq. Dancers Planning 'Round-up Party'

CRA Dynamic Eights will fete past members of all Convair square dance clubs at a Round-up Party in CRA Clubhouse Feb. 19 from 8-10:30 p.m.

Guests of honor will be past presidents and commissioners of the clubs.

Dynamic Eights are continuing to accept registrants for the spring beginner dance class. Sessions held Feb. 10, 17 and 24 will be for registration. Employes, families and friends 16 years and older are eligible. Additionally, the club will register in the beginner class any experienced dancers who may want a refresher course.

Classes will be each Tuesday from 8-10 p.m. beginning Feb. 10 and continuing through June.

For further information call R. J. Collette, ext. 1050 LF or the CRA Clubhouse, ext. 1111 KM.

Golfers at VAFB Lose to Rocketdyne

The third in a continuing series of golf matches between Convair and Rocketdyne employes at Vandenberg AFB has resulted in the first Convair loss and the possession of the perpetual trophy by Rocketdyne.

The score was close, however, 73-76 points. Low scores were C. C. Blacksmith, Dept. 985-1, with net 68, and V. C. Cardiel and B. Slot, Dept. 985-1, both with 70.

Next match will be March 15 at Black Lake Golf Course, Nipomo. For information call Art Moore, 864-2517 or 864-2522.

Schneider Shades Walker in Match

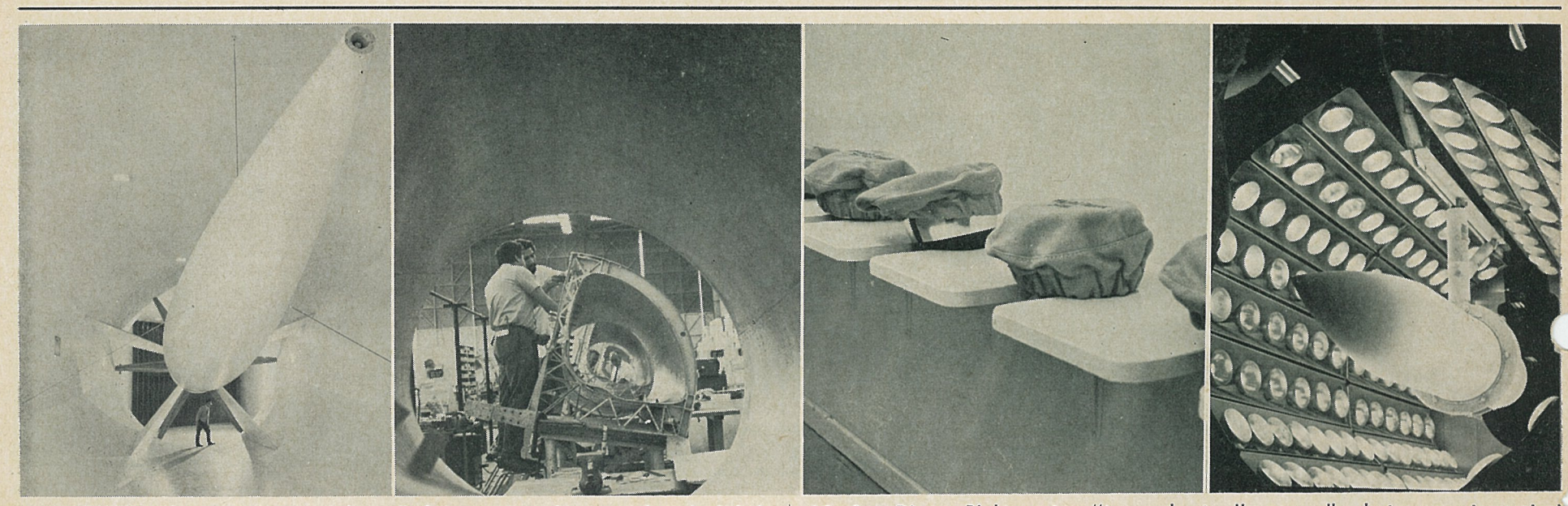
CRA Pistol Club marksman Roland Schneider shot a 290-8x score to edge second place Warren Walker, 288-9x, in Masters class competition at the club's Jan. 25 matches.

Other match results were: Expert—Jerry Lehrer, 277x5x; Dick Sutton, 275-1x; .22 cal. Short National — Don O'Brien, 289-7x; Schneider, 285-4x; Harry Black, 274-5x; Walker, 273-8x.

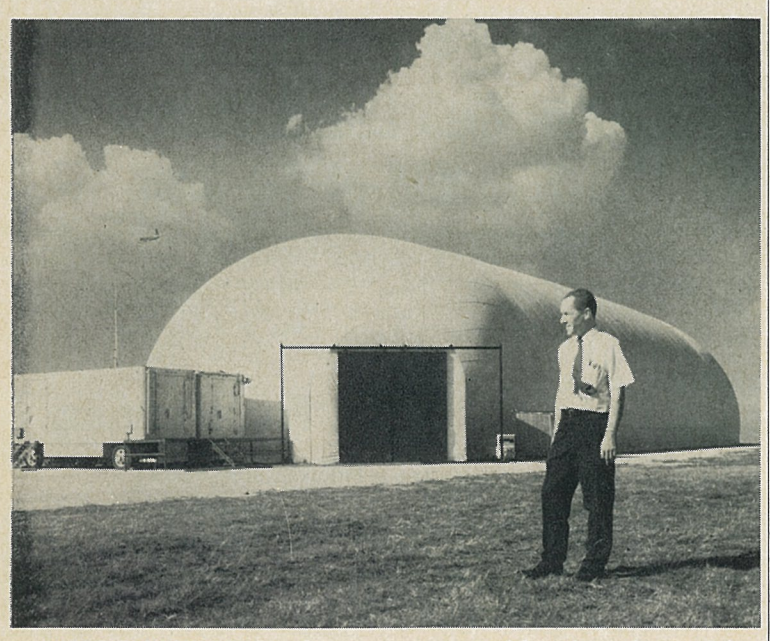
Next match is Sunday (Feb. 8) at Police Pistol Range at 9:15 a.m.

"DOLLY" TICKETS NOW AVAILABLE

Tickets for the 8 p.m. Feb. 22 showing of "Hello Dolly" at College Theatre are on sale at CRA and employe benefits outlets. Cost is $2.40 for $3 seats.



WHATSIT?—If you can guess what all these are, you're a genius. At left is inside low speed wind tunnel at San Diego, showing housing for 2,250-hp motor which turns six-blade propeller, producing winds up to 300 mph. Left center: "tunnel vision" photo shows fixed cowl assembly line for F-111 work at AF Plant 19, San Diego. Right center: "tam-o-shanters" are really dust covers to protect cathode ray tubes after final inspection at Stromberg DatagraphiX. Right: infrared heat lamps are used at Pomona division to dry paint on missiles prior to packing for shipment.



BALLOON BUILDING—Structure supported by air and containing no metal parts in upper sections has been erected at Fort Worth division. J. J. Clark Jr., Dept. 062-4 group engineering department supervisor, is in charge of project.

Air-Pressurized Building Erected at Fort Worth

A basketball court would fit nicely in an air-supported building constructed recently west of the main plant at Fort Worth division. The structure looks like a giant balloon.

The building is 170 feet long, 60 feet wide, and 30 feet high. It is made of nylon plastic-coated cloth and has no metal in the upper structure.

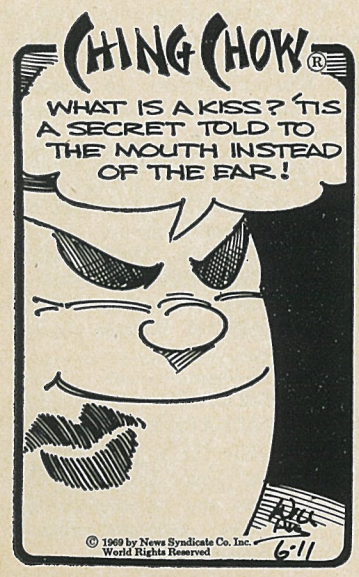
Larry H. Baumhardt, senior buyer in Dept. 89, said this type of building is used by industry throughout the world, mostly for storage or radar.

Griffolyon Co. of Houston built the structure. Installation began on a Friday when a crew of seven set soil anchors in 85 six-feet deep holes. Two blower systems, which run on an electric hook-up, were then installed.

The plastic-coated cloth was placed the following Monday in a process similar to tying down a tent.

Initial inflation took about 45 minutes. The two blower systems run continuously to maintain internal pressure, with a damper valve providing air escape as needed to prevent overpressurization. A gasoline-powered auxiliary system will be used for pressure in event of power failure.

The structure has no floor and is guaranteed to withstand 75-mile-an-hour winds.



Consideration Urged In Parking Practices

Observing parking regulations helps everyone at Pomona division, Guard Chief P. J. Davidson reminded employes last week.

"Parking lots are maintained for the convenience of all of us," Davidson explained. "Being considerate of fellow workers will greatly add to our safety."

Among the more persistent kinds of disregard for traffic signs and parking regulations are: illegal parking in reserved stalls (for use of employes with a physical handicap so they may park as near as possible to their work); backing into parking stalls (so that when cars leave, they are driving against traffic flow); and blocking aisles (by abandoning cars in front of gates which must be opened later to allow exit of employes).

It's simple to avoid causing these traffic and parking problems — just park correctly in a legal space and walk the few extra steps that may be needed to reach the guard gates.

ASQC Meets Mar. 28 At State College

Mayor Frank Curran has proclaimed March 22-28 as "Quality Control Week" in San Diego.

The proclamation was made in conjunction with the American Society for Quality Control's ninth annual conference to be held March 28 at San Diego State College.

If one copy is sufficient, why order more?

Streamlined Form Adopted for Taxes

General Dynamics people won't have trouble deciding which income tax form to file this year. There's only one!

Internal Revenue Service has dropped card Form 1040A and developed a new "streamlined" one-page Form 1040. Additional pages (called schedules) can be attached to itemize deductions and cover special income and expense situations.

IRS estimates 31 million taxpayers will file the single-page 1040s, with another 22 million adding only one schedule. This means a majority of returns will consist of one or two pages.

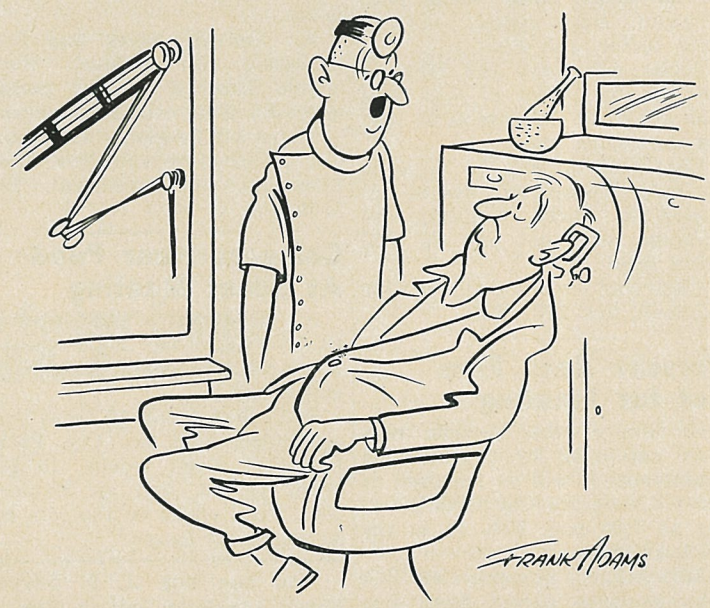
Lewis to Chair Bonds Campaign Again in 1970

Roger Lewis, president of General Dynamics, again has been named to the U. S. Industrial Payroll Savings Committee by David M. Kennedy, Secretary of the Treasury. Lewis will serve for the second consecutive year as chairman for the electronics and electrical equipment industry for the 1970 Savings Bonds campaign.

The committee is composed of chief executives of leading corporations throughout the nation. Its purpose is to stimulate regular purchase of Savings Bonds through the payroll savings plan.

Gordon Metcalf, chairman of the board of Sears, Roebuck and Co. and 1970 chairman of the Industrial Payroll Savings Committee, said the payroll savings plan is the best self-defense against inflation.

"It is invaluable in helping the employe develop a systematic savings program," he said. "With the new rate increase to five per cent, retroactive to June 1, 1969, Savings Bonds are a better-than-ever purchase for the employe who wants to improve his stake in the future."



"Too bad you didn't come in sooner. Your teeth are okay but your gums have to come out."

Family Care

Regular Medical and Dental Checkups Key to Good Health

BY DR. ALEXANDER L. STRASSER*

(Following is another in a Corporate-sponsored series of general health articles authored by different General Dynamics physicians. Today's article outlines general guidelines helpful in establishing a program for family well being.)

Good health is desired by every family, but frequently little attention is paid to methods of achieving and maintaining this objective. Many will not seek medical care until a major sickness occurs. This is where the old adage, "An ounce of prevention is worth a ton of cure," really comes true.

Preventive medicine starts at birth. When a child is born, a call to a competent pediatrician should be one of the first things to do. In most cases the pediatrician will check the baby before he even leaves the hospital and then set up a regular schedule of visits.

Once the "critical" period is passed, the child goes on an annual schedule of physical checkups while continuing to receive all the required innoculations to prevent many known diseases that attack the young.

What happens when we become ill? All too often the annual visit to the doctor is forgotten or termed unnecessary because we all tell ourselves, "I'm not sick —why go to the doctor?"

True, periodic examinations do not guarantee good health, but often illnesses such as high blood pressure, diabetes and cancer are detected at stages where vigorous early treatment can be successful.

Cancer of the cervix, for example, has a 100 per cent cure rate when found early; at a late stage, there is a five year survival rate of less than 10 per cent.

Is there anything else we can do to preserve our good health in addition to the all important periodic visit to a physician? The following items that should be considered by every member of the family:

EXERCISE—Today a round of golf or a walk from the parking lot into the stores of a shopping center is considered strenuous exercise. To be effective, exercise must raise the pulse rate. Studies in medical journals show that proper exercise may slow down hardening of the arteries, lead to more efficient oxygenation of the lungs and give a general feeling of well being.

Some examples of therapeutic exercise are jogging, running in place, swimming, cycling, basketball and squash. Be sure you receive adequate exercise for a healthier life, but check with your physician to obtain his advice on an exercise program.

SMOKING — Statistics prove that heavy cigarette smoking is associated with an increased incident of lung cancer, hardening of the arteries and emphysema, three of the most common causes of death in the adult population.

HEAVY DRINKING—The alcoholic is a poor family man and usually is an unreliable worker. In addition, the alcoholic is prone to diseases such as cirrhosis of the liver, esophageal varices (dilated veins in the esophagus that can bleed) and duodenal ulcers.

If a person drinks three martinis a day, he already is consuming 450 calories. No wonder he cannot stick to a 1200 calorie reducing diet. Other side effects of excessive alcohol intake are poor judgment at work and behind the wheel. The latter often results in a fatal accident.

OBESITY—Insurance companies have very impressive statistics showing that obese men and women live shorter life spans than normal adults. The obese adult has a greater chance of suffering a heart attack, stroke or diabetes mellitus (sugar diabetes).

DENTAL CARE—Here too, we often delay a visit to the dentist until an emergency arises. Periodic visits to the dentist are essential for every member of the family to spot potential trouble.

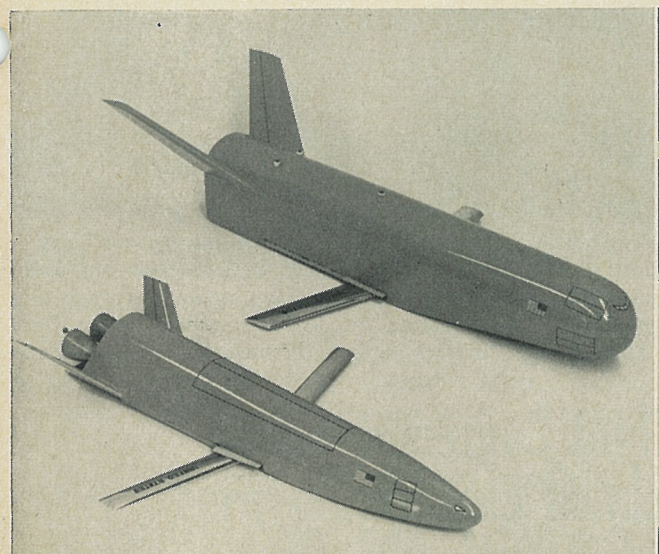
It is important that every member of your family receives proper medical attention to insure continued good health. If you do not have a regular schedule of visits to your medical doctor and your dentist, plan today to make those appointments. Remember, annual visits are the absolute minimum to help insure a healthy future.

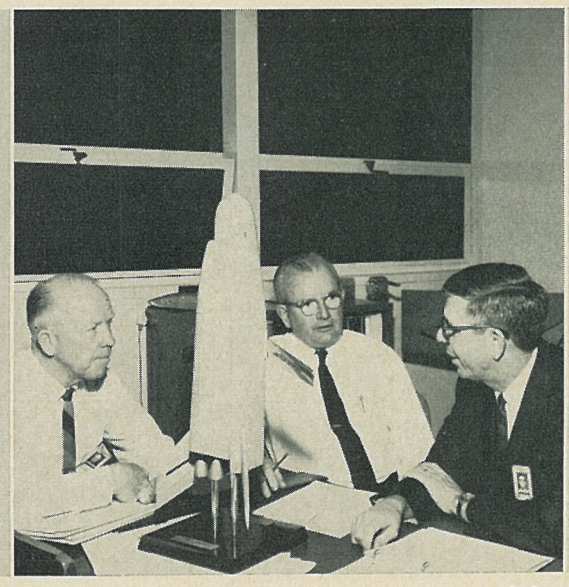
***Dr. Strasser received his medical degree in 1962 and his master's degree in occupational medicine in 1967 from the University of Rochester. He served as resident physician in preventive medicine at Strong Memorial Hospital from 1965-67 and was a U.S. Atomic Energy Fellow in Occupational Medicine at the U. of R. 1965-67.**

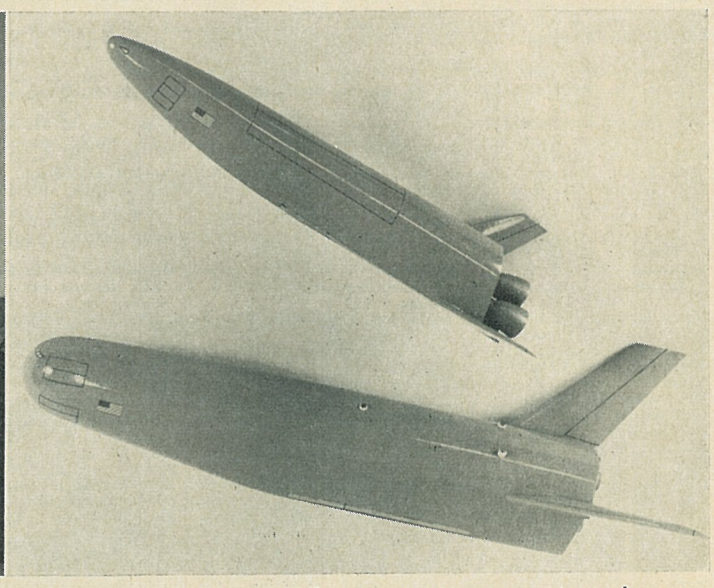
SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 23, No. 4 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, February 18, 1970







SHUTTLING IN SPACE—In center photo, discussing Convair division's role in competition for NASA space transportation system, are F. J. Dore, right, program director; R. A. Lynch, responsible for predesign and structural design, center; and L. E. Munson, left, design and analysis. Models are among concepts under consideration. Convair and North American Rockwell, as a team, will compete for NASA's definition study contract.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—What is the monetary recognition, as well as timing, when an employe receives an advanced degree (MS, MBA, or PhD) while at Convair?

A—A special salary review is conducted as soon as industrial relations has been notified. Personnel Administration Manual 1-6, issue 4, and 3-22, issue 1, contain details of the policy. Supervisors have copies to show you.

★ ★ ★

Q—On several occasions material from Commercial Stores has been delivered to my department short of the full lot ordered. When I complained, Commercial Stores stated they had delivered the full lot to transportation. Evidently the missing supplies disappeared in transit. My concern is that I am paying out of a minimum budget for items not received. Can anything be done about this?

A—Your concern in this matter reflects the proper attitude for a conscientious employe and this quality is appreciated. As part of the Convair division Loss Prevention Program, items from Commercial Stores that could be pilfered are now transported in locked containers. Also, physical protection in the stores pickup area has been strengthened. In the event you receive a short shipment in the future, notify industrial security immediately and an investigation will be conducted.

★ ★ ★

Q—Pomona division offers free influenza vaccine, with older employes receiving priority. Why can't Convair offer this service?

A—Pomona division, much smaller than Convair, gave free injections to a selected group only. Convair has no such program planned at this time. Factors considered include the fact that some individuals react adversely to the vaccine, and there are differing opinions in medical circles as to the vaccine's relative value.

John Hopman Retires Next Month; Began as Riveter in Buffalo Plant

John P. Hopman, Convair chief safety engineer since 1967 and former Kearny Mesa plant factory manager, retires next month after almost 35 years continuous service with the company.

Del Dimmitt, division fire chief, will assume responsibility for the safety section effective March 1, in addition to his present duties.

D. D. Dimmitt

J. P. Hopman

Hopman joined Consolidated Aircraft Co. in Buffalo, N. Y., Feb. 3, 1930 as a riveter on assembly panels for an early Thomas Morse aircraft.

He was never without work during the depression although he did have to move for brief periods to Taylor Aircraft, Pierce Arrow, Hall Aluminum, Curtiss Wright, and Sikorsky.

"We were in the center of the fledgling aircraft industry and when work ran out at Consolidated I just packed my tool kit and moved to a firm with a contract," he recalls.

Hopman worked on the Fleetster and Commodore and was hull

(Continued on Page 2)

Space Shuttle Slated To Be Next 'Workhorse'

Just as the Atlas and Centaur have been the workhorse combination for early U.S. space exploration, so the space shuttle will be the workhorse of the future.

In a recent article, Dr. Werhner von Braun, director of NASA's Marshall Space Flight Center, said "the shuttle is the next logical step, now that we have learned the essentials of how to fly, exist, and work in the new environment of space.

"We want to be able to conduct shuttle flights to an orbit as easily as airplane flights across the ocean to another continent," von Braun stated.

Convair, which has been working on the concept of a shuttle for 12 years, has teamed with North American Rockwell for the contract competition.

The shuttle consists of two main components, the orbiting stage for which North American Rockwell has prime responsibility, and the booster, for which Convair has prime responsibility.

According to F. J. Dore, space shuttle program director, present concepts of the booster call for a vehicle with 12 rocket engines, each capable of 400,000 pounds thrust, using liquid oxygen-liquid hydrogen fuel.

The booster would be approximately 253 feet in length. Gross takeoff weight, including the orbiter, would be 3.5 million pounds.

Convair is studying several aerodynamic designs including a two-position wing, a delta wing, and a fixed wing configuration. Dore said that presently Convair favors the two-position wing which would have the wings folded inside the fuselage during liftoff and re-entry and extended fully during subsonic flight back to the launch site.

The orbiter, according to present NASA plans, would have an equipment bay 15 feet in diameter and 60 feet long and be capable of carrying cargo loads in excess of 20,000 pounds.

The size of the booster and

(Continued on Page 2)

Salvage Schedule

Next employes sales day at the materials salvage yard, Lindbergh Field plant, will be Saturday, March 7. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. No canvas or open-toed shoes and no bare feet.

Convair Teams In Space Study

Convair has teamed with North American Rockwell to compete for NASA's space transportation system Phase B definition study contract.

The team effort was announced jointly by Jack L. Bowers, president of Convair division, and William B. Bergen, president of North American Rockwell Corporation Space Division.

The mission of the space transportation, known as the "space shuttle," is to reduce the cost of orbiting payloads by making both launch and orbit vehicles reusable and therefore more economical.

NASA is expected to issue RFP's (Request for Proposal) for the Phase B study at the end of February. The proposals would be due at NASA in late March and the Phase B study contracts awarded by June 15. At present, Phase B studies are expected to run for 11 months.

NASA is expected to fund at least two, and possibly more, teams for the Phase B studies which will lead to the Phase C design and hardware competition.

Under the teaming agreement, Convair will concentrate on development of the booster for the system and North American Rockwell, as team leader, will handle systems integration and development of the orbiter. Both orbiter and booster will be completely reusable.

Bowers said that "I feel this combination of experience represents the strongest possible team to evolve this new concept."

Both Convair and North American Rockwell had previously won contracts from NASA and from the Air Force to study initial designs of the space shuttle. Each company has also devoted considerable independent research on technology for the vehicle.

Bergen stated that "our goal is to produce vehicles capable of repeated space flights with minimum maintenance in between."

Previously North American Rockwell had formed teaming arrangements with IBM for an integrated electronic data system and with Honeywell for stabilization and control, guidance and navigation. The two firms will remain on the North American-Convair team.

Frank Dore is shuttle program

(Continued on Page 2)

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Shuttle Technology Groups Parallel NASA Organization

Convair has created a series of space shuttle technology working groups to assist the division in competing for space shuttle technology study contracts.

The Convair group organizations parallel a Space Shuttle Technology Organization created by NASA to organize the basic technology studies needed for the space shuttle effort.

The groups are composed of representatives from Convair departments that are, or might be, bidding for technology study contracts and representatives from the Convair space shuttle organization. Personnel will then work with their NASA counterparts to insure a more rapid and complete response to NASA's space shuttle requirements.

Chairman of the NASA Space Shuttle Technology Organization is A. O. Tischler, Office of Advanced Research and Technology. His Convair counterparts are J. M. Wild, Dept. 570-0, and E. O. Naumann, Dept. 582-0, for the Convair technology group (TG) and F. J. Dore and R. A. Nau, Dept. 580-0, representing the space shuttle (SS) organization.

The NASA technical groups, their chairmen and Convair counterparts are: aerothermodynamics configuration, Eugene Love, LaRC, R. R. Lanflisi, Dept. 583-0, (TG), and R. G. Lynch, Dept. 580-O, (SS); dynamics and aeroelasticity, Harry Runyan, LaRC, R. E. Martin, Dept. 585-0, (TG), and Michael Dublin, Dept. 582-0, (SS); propulsion, Jerry Thomson, MSFC, F. A. Stephenson, Dept. 584-0, (TG), and A. L. Schuler, Dept. 952-5, (SS); structures, thermal protection system, and material, Roger Anderson, LaRC, W. H. Schaefer, Dept. 509-0, (TG), and Lynch; human factors, Joseph Pecoraro, OART, Dr. R. C. Armstrong, MD, Dept. 592-0, (TG), and David Krause, Dept. 509-0, (SS); integrated electronics, Cline Frasier, MSC, Orison Wade, Dept. 509-0, (TG), and C. E. Grunsky, Dept. 509-0, (SS); operations, maintenance, and safety, Milton Thompson, FRC, H. R. Auten, Dept. 575-0, (TG), and F. E. Huggin, Dept. 509-0, (SS).

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Feb. 1 and Feb. 15.

Thirty-year: Dept. 015, S. Penziul; 027, J. T. Mitchell; 059, J. R. Ernst; 142, A. E. Lyerla; 144, G. A. Knauss; 190, F. N. Minter; 195, L. Grant; 400, J. G. Elston; 531, L. F. Ballou, H. W. Dvorak; 533, J. G. Hawkins; 579, F. H. Miller; 580, G. Karel, 585, J. T. Jackson.

Twenty-five-year: Dept. 001, C. A. Wilson; 031, F. C. Martin; C. Andrade; 565, F. N. Thudium; 756, J. B. Smith; 780, W. I. Gregory.

Twenty-year: Dept. 027, F. A. Rado; 511, J. E. Whiston; 533, B. E. Shirk; 541, R. F. Kalal; 584, F. A. Stephenson; 587, H. G. Bradley.

Fifteen-year: Dept. 015, L. W. Kirkendall, V. C. Steeves, 046, E. W. Etnire; 059, J. A. Hamm; 195, J. A. Bailey; 202, Mayme M. Liminga; 541, F. M. Millican; 542, E. Beaver; 545, R. F. Myers, D. L. Swingle; 550, R. E. Moore; 587, R. L. Arnicar; 780, Betty J. Gossett; M. D. Katalack; 810, W. S. Severson; 967, H. W. Wiebe.

Ten-year: Dept. 015, C. E. Ramsey, F. A. Todd; 101, Marilyn Mesa; 110, Mary D. Danely; 130, Frances L. Kruse; 142, H. A. Gregori; 170, G. Yamada; 250, C. DeNardo; 518, J. A. Brown; 524, Rachel C. Clark, Glorida J. Conrad, Virginia Eaton; 551, Joe R. Daleo; 553, O. Aman, D. Scannell; 565, Merline D. Chambers; 572, S. Naber; 832, Barbara A. Shepard; 833, J. L. Jobe; 950, W. M. Fulton; 953, S. D. Losch; 954, R. D. Doolittle.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Jan. 30.

Dept. 027, A. Acosta, $15; 027, J. A. Alvarez, S. L. Williams, $7.50 each (joint award); 507, R. L. Black, $25; 401, W. H. Boggan, $25; 020, E. Bowers, $137.70; 191, J. D. Burns, $66.20; 027, R. D. Cole, R. Pioterek, $7.50 each (joint award); 507, R. R. Culp, $42.80; 526, B. C. Dickinson, $17.80; 565, B. A. Dill, $15.

Dept. 578, J. C. Easton, $15; 059, E. F. Isacco, $25; 985, H. A. Kamman, $15; 507, R. H. Lewis, R. W. Sanger, $96.95 each (joint award); 507, W. F. Lindquest, $104.60; 574, G. R. Mabie, $66.50; 584, D. C. Reda, $15; 059, C. E. Thornton, $30.60; 027, E. E. Yturralde, $55.70; 518, R. J. Zenger, $23.50.

Employee Suggestion awards approved for the week ending Feb. 6.

Dept. 027, D. J. Alfstad, C. Dinkins, $57.50 each (joint award); 979, C. D. Amos, $25; 519, T. P. Balistreri, $16.60; 780, J. H. Beals, $15; 744, J. J. Campbell, $77.80; 985, V. D. Brose, $15; 587, W. S. Bussey, $15; 130, J. H. Cooper, $45.40; 250, H. F. Dombrock, $133.80; 059, N. L. Ellis, $177.50; 780, C. E. Gladney, A. Lewis, $23.30 each (joint award); 452, T. P. Hartman, $15.

Dept. 101, J. A. Michels, $15; 015, T. J. Nilsson, $27.50; 027, D. R. Noon, $22.10; 027, J. H. Parsons, $38.20 (two awards); 001, E. M. Preite, C. E. Sadley, $7.50 each (joint award); 059, S. E. Smerdon, $54.50; 059, B. C. Somerville, $76.70; 507, T. C. Stark, $15; 142, J. D. Stevens, $161.40; 149, G. H. Townsend, $15; 401, L. Trentacosta, $25; 130, W. F. Weidenfeller, $15; 584, K. D. Whitehead, $15; 027, L. H. Wilson, $35.40.

Retirements

CONVAIR

ATTIG—Raymond H., Dept. 420-6. Seniority date Aug. 29, 1955, retired Jan. 16.

CARPENTER—Stanley R., Dept. 572-2. Seniority date Aug. 5, 1940, retired Jan. 30.

CHASINOWITZ—George, Dept. 661-3. Seniority date May 28, 1951, retired Jan. 26.

CREESE—Hilda Z., Dept. 565-3. Seniority date Sept. 29, 1947, retired Jan. 30.

DEARMIN—Jerome E., Dept. 149-6. Seniority date Sept. 8, 1947, retired Jan. 30.

DONALDSON—Jack D., Dept. 583-0. Seniority date June 26, 1944, retired Oct. 10, 1969.

DUNBAR—Robert M., Dept. 587-0. Seniority date Oct. 16, 1940, retired Jan. 30.

GASKINS—Jackson J., Dept. 131-1. Seniority date Sept. 24, 1941, retired Jan. 23.

GREEN—Dixie W., Dept. 059-2. Seniority date April 17, 1957, retired Jan. 30.

HANSON—LeRoy E., Dept. 966-4. Seniority date May 3, 1943, retired Jan. 30.

HARTER—James B., Dept. 533-2. Seniority date March 8, 1943, retired Jan. 30.

HODGE—William I., Dept. 250-2. Seniority date March 6, 1958, retired Jan. 30.

HUGHES—Harry R., Dept. 250-2. Seniority date April 8, 1957, retired Jan. 30.

JOHNSON—Hilding R., Dept. 401-4. Seniority date Sept. 5, 1967, retired Jan. 30.

JOHNSON—Merne, Dept. 191-0. Seniority date Jan. 8, 1942, retired Jan. 30.

JONES—Vernon V., Dept. 979. Seniority date April 17, 1956, retired Jan. 30.

LANDY—George C., Dept. 733-0. Seniority date Nov. 15, 1948, retired Jan. 30.

LARSEN—Reidar, Dept. 460-0. Seniority date March 19, 1951, retired Jan. 16.

McNEEL—Jesse L., Dept. 143-4. Seniority date Oct. 10, 1957, retired Jan. 30.

MEACOCK—Douglas F., Dept. 591-0. Seniority date May 1, 1963, retired Nov. 1, 1969.

O'CONNOR—James A., Dept. 049-0. Seniority date Oct. 12, 1936, retired Jan. 30.

OGILVIE—Gladys W., Dept. 059-9. Seniority date Sept. 13, 1955, retired Jan. 30.

PARKER—Truman A., Dept. 533-1. Seniority date Aug. 28, 1956, retired Jan. 30.

PARKER—Winfred C., Dept. 015-0. Seniority date Aug. 18, 1966, retired Jan. 30.

RIBERO—Benjamine F., Dept. 027-0. Seniority date Jan. 22, 1947, retired Jan. 17.

SMITH—Clarence R., Dept. 587-1. Seniority date Nov. 13, 1941, retired Jan. 30.

STUTZMAN—Harold S., Dept. 194-1. Seniority date Nov. 19, 1940, retired Jan. 23.

SUESS—Ralph W., Dept. 979-1. Seniority date Feb. 23, 1959, retired Nov. 18.

THURSTON—LeRoy C., Dept. 015-0. Seniority date May 17, 1955, retired Jan. 30.

WEATHERALL—Gwendolyn D., Dept. 966-3. Seniority date May 18, 1951, retired Dec. 1, 1969.

WESP—Earl H., Dept. 400-2. Seniority date Jan. 7, 1925, retired Jan. 30.

WOODHEAD—John, Dept. 401-1. Seniority date Sept. 19, 1935, retired Jan. 30.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Rider-Driver

CONVAIR

RIDE WANTED—El Cajon (near First Street) to Lindbergh Field plant, 3:30 p.m. to midnight shift. Call John Slatinsky, ext. 2187 LF or (home) 444-7398.

RIDE WANTED—Or form car pool from Poway-Mira Mesa area to Lindbergh Field plant, 7:30 a.m. to 4:15 p.m. shift. Call Dennis Millard, ext. 1843 LF or (home) 271-0639.

RIDE WANTED—From Delta St. near National City line to Lindbergh Field plant. Shift hours, 7 a.m.-3:30 p.m. Call E. L. Risner, LF ext. 408 or (home) 264-9247.

RIDE WANTED — Country club area, Chula Vista near Hilltop and L, to Lindbergh Field plant, 7 a.m.-3:30 p.m. shift. Call John Oakley, ext. 1411 LF.

Personals

CONVAIR

I would like to thank my friends at Convair for their many get well messages and phone calls during my recent stay in the hospital and while recuperating at home.

J. L. Jacobi (Mickey)

* * *

I wish to convey sincere appreciation for the thoughtful expressions of sympathy I received due to the recent death of my father.

E. F. Gurling, Dept. 401-4

* * *

We would like to thank the many friends for their considerations, flowers, cards, and expression of sympathy in the passing of our devoted husband and father, Roy G. Newman.

Mrs. Roy G. Newman,
Helen Miller, Marlene Watson,
Aldean Rohowits

* * *

I wish to express my thanks and deep appreciation to the many friends at Convair for the flowers and contributions upon the recent death of Pat Cowan.

Ray Cowan

* * *

Your thoughfulness and gifts were extremely appreciated during my hospitalization. Many thanks to all of you.

Jim Pinkerton, Dept. 149-3.

* * *

Mr. and Mrs. William J. Kenyon wish to express their sincere thanks to friends at Convair for their kindness after the death of their daughter Doris.

Deaths

CONVAIR

NEWMAN—Roy, G., Dept. 460-0, died Feb. 2. Survivors include his wife, Eythel, three daughters, Mrs. Helen R. Miller, Mrs. Marlene Watson, and Mrs. Aldean Rohowits, mother, Mrs. Mae Anderson, brother, Wallace, eight grandchildren, and a great-grandchild.

PIPER—Chas. W., retired Jan. 15, 1962, Dept. 280, died Jan. 21. Survived by his wife, Gladys.

ELECTRONICS

NEILL—Richard Lee, Dept. 615, died Jan. 22. Survivors include his wife, Jo-Ann, daughter Dori, sons Douglas, Roger, his mother, Mary, five brothers and two sisters.

REYNOLDS—Arthurs T., Dept. 923, died, Jan. 31. Survived by his mother and father, six brothers and 3 sisters.

Holidays For 1970 Listed

Monday, Feb. 23, will be a holiday for Convair and Electronics-SD employes, commemorating Washington's birthday. It is the first time the holiday is being observed by the two organizations.

There are nine other holidays between now and Jan. 1, 1971. They are:

Friday, May 29, Memorial Day.

Friday, July 3, Independence Day.

Monday, Sept. 7, Labor Day.

Thursday and Friday, Nov. 26-27, Thanksgiving and the day after.

Thursday and Friday, Dec. 24-25, Christmas and the day before.

Thursday and Friday, Dec. 31-Jan. 1, New Year's and the day before.

MANNED SPACE FLIGHT BEGAN EIGHT YEARS AGO

Friday, Feb. 20, will be the eighth anniversary of the flight of Atlas 109-D, better known as the Atlas which placed John Glenn into orbit.

Space Shuttle Slated To Be Next 'Workhorse'

(Continued from Page 1)

orbiter, according to Dore, would be similar to a C-5 flying with a DC-10 piggyback.

NASA requirements are that the shuttle be capable of being reused at least 100 times. Dore said that Convair's design should be "considerably in excess of this figure."

The key problem for the airframe manufacturers, said Dore, is development of a safe, reliable, maintainable thermal protection system. The ablative heat shielding material used on present space capsules is not acceptable because it is partially destroyed on re-entry, which would mean increased maintenance on the shuttle. Also, ablatives are too heavy, Dore added.

The space shuttle program objectives are to reduce the cost of space transportation by an order of magnitude to around $50 to $100 a pound; have a flexible payload capability to support a variety of space applications; have a commercial airline type environment for passengers; and have a reusable system with high launch rate capability and short turnabout time.

Dore said that the basic technology to build the shuttle is available.

"The key is to make it economical and reusable," he emphasized. For example, the electronics must be more on the order of those designed for the S3A program rather than the Apollo space flights. "We must have integrated electronics, with on-board checkout systems and trouble shooting, just like an airplane, in order to achieve the required two-week turnaround time."

In his article, von Braun called the development of the shuttle "one of the most important immediate objectives for our space program." He added that by using the shuttle as a ferry, in conjunction with a space station, "the potential is virtually unlimited for contributing to our national economic growth and to our social well being."

Convair Teams In Space Study

(Continued from Page 1)

director for Convair and has worked on reusable space vehicles for more than 10 years. He will report to Dr. Donald Dooley, newly appointed Convair vice president for space programs. (**GD/NEWS Feb. 4**).

Heading North America's space shuttle team is Bastion "Buz" Hello, vice president and former manager of the firm's launch operations organization in Florida. Also on the North American team is Charles Feltz, former deputy program manager for Apollo and project engineer for the X-15 research airplane.

Other members of the Convair team and their areas of responsibility are R. W. "Dick" Keehn, study manager for the Phase B competition; R. A. Nau, assistant manager of space shuttle programs; C. J. Cohen, Glenn Karel, and W. H. Bond, project engineers.

R. C. Sebold, K. J. Bossart, and R. L. Bayless, consultants; F. R. Lee, safety and reliability; E. O. Naumann, space shuttle technology; D. J. Jones, NASA requirements; Mort Kantor, systems analysis; H. M. Bonesteel, systems integration; D. P. Wright, program control; F. R. Lucas, procurement and subcontracts; A. J. Von der Wische, manufacturing; L. E. Munson, design and analysis; C. E. Grunsky, electronics integration; F. A. Huggin, operations; Michael Dublin, analysis; R. A. Lynch, predesign and structural design; D. Krause, subsystem design; A. L. Schuler, propulsion integration; M. E. Stone, ground support equipment and facilities design.

THIRD TRIUMPH—J. M. Adamson, center left, presents Convair LF operations' 1969 cost reduction trophy to E. H. Damarus, manager of production engineering. Similar awards won two previous years by production engineering are in foreground. Others (front row from left) are W. G. Martin, E. J. Penner, O. L. Hunley, and J. C. Duffy.

For Third Consecutive Year, Production Engineering Wins

Production engineering has been awarded the Convair Lindbergh Field operations department's cost reduction trophy for 1969 — marking its third consecutive year for such an award.

Combined cost reduction savings for the year for production engineering was $2,475,000 — 175 per cent above its assigned goal for the year.

The tool project engineering function (Dept. 400-2) achieved highest saving of $1,245,000 within production engineering.

LF operations' tool manufacturing personnel ran a close second with savings of $1,231,924.

Production engineering held the LF operations' perpetual trophy each quarter last year before receiving it for permanent display. Tool manufacturing received the award the first three quarters and tool project engineering the last quarter.

Determination of the annual award winner was based primarily on best performance to goals, highest credited savings, exceptional interest and participation in all departmental areas, and highest number of innovative and unique cost reduction projects initiated.

John Hopman Retires Next Month; Began as Riveter in Buffalo Plant

(Continued from Page 1)

leadman on the prototype PBY before moving with the company to San Diego in 1935. He became a foreman in 1941, and assistant factory superintendent in 1942—working on several versions of the reliable PBY and first of the famous B-24s.

During the latter part of World War II, Hopman was superintendent and works manager in company plants in Elizabeth City, N. C., New Orleans, La., and Wayne, Mich.

After returning to San Diego, Hopman served as final assembly superintendent on the Convair 240 liner, the L-13 short-takeoff aircraft, and the T-29B trainer.

He was named factory superintendent for Model 7 (later to become the Atlas) and served as factory manager for fabrication of the first missiles in Bldg. 4 at Lindbergh Field before opening of Kearny Mesa plant.

Hopman was Kearny Mesa factory manager from 1957 to 1967, responsible for assembly and fabrication of the Atlas and during development of the high-energy Centaur second-stage launch vehicle.

Dimmitt joined Convair as a fireman in 1950 after serving in the U. S. Marine Corps and worked his way up through the ranks. He has been fire chief since 1966.

He has been active in Convair Con-Trib-Club and is CRA Golf Club commissioner. A member of the National Fire Protection Association and the San Diego Chamber of Commerce fire safety committee, Dimmitt coaches a major-division Del Cerro Little League baseball team, and is working toward a Certificate in Industrial Relations through University of California Extension.

S. R. Sharp, manager of industrial security, to whom both Hopman and Dimmitt report, said no major changes in operation of the fire and safety functions are contemplated.

"Hopman and Dimmitt both have been dedicated to doing everything possible to make our Convair facilities a safe place in which to work," he said. "Work of both functions will continue under Dimmitt's leadership. Attention to all aspects of safety on the part of all employes is needed to improve our safety record this year."

Dynamics Ranks 16th In NASA Contracting

General Dynamics Corporation is ranked 16th on the NASA list of 100 top contractors for fiscal year 1969. The Corporation received $34,003,000 in direct contract awards, which represented 1.13 per cent of the total NASA contract awards of $3,022,333,000.

Top contractor was North American Rockwell, recently teamed with Convair division for the space shuttle competition.

Bratton Named Aide to Bowers

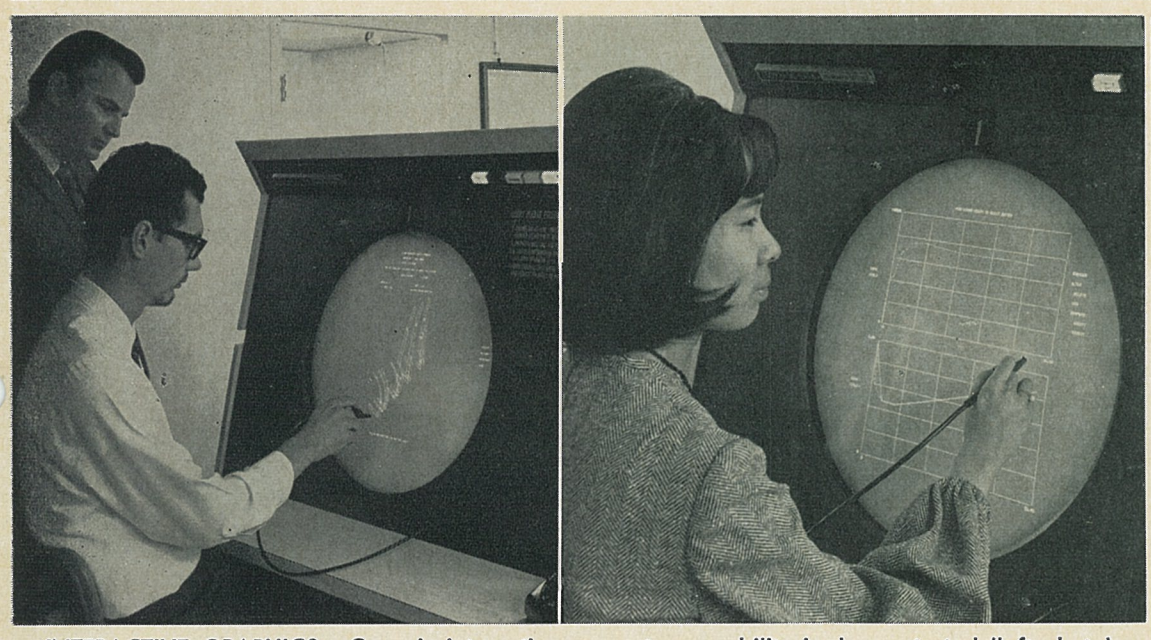
William E. Bratton, for the past year assistant to C. F. Horne, president of Pomona division, has been transferred to Convair division as assistant to Jack L. Bowers, Convair president.

W. E. Bratton

Bratton was vice president and general manager of Ampex Computer division of Ampex Corp. before joining General Dynamics and previously was with Librascope division of General Precision, Inc. for 16 years, the last three as president.

Bratton attended Glendale College, was graduated from Stanford University in 1940 with a degree in economics, and later served as an engineering planner and department manager for Lockheed Aircraft Co.

He was a lieutenant in the U. S. Navy during World War II, serving as a supply officer on a seaplane tender.



INTERACTIVE GRAPHICS—Convair interactive computer capability is demonstrated (left photo) as Mike Cronk, structural analysis engineer in Dept. 587-0 stress group, uses light pen in developing mathematical model of aircraft aft fuselage and vertical tail fin section. Looking on is Gerry Davis of Dept. 101-6. In right photo, Sandra Yoshihara, research engineer in Dept. 595-4, creates line from computer data points in "least-squares curve-fit" exercise.

Engineers 'See' Problems Developing on Screen

Convair division is developing an interactive computer graphics capability that will enable engineers to alter problems as they are being solved or change designs as they are being produced on a cathode ray tube screen.

Kenneth Bonine, a design specialist in Dept. 574-2 and interactive graphics project leader for the division, said redirection of the computer as the program is being run can reduce time required in achieving the best solution to a problem.

With interactive graphics, the engineer watches the problem on the screen as it is being worked and can change parameters as needed if he sees he is not going to have an acceptable value.

A light pen, actually a pencil-like bundle of fiber-optics, is used by the operator to cause the computer to generate new data and project it on the screen or delete undesired data.

Placing the light pen over displayed words or "light buttons" on the border of the screen can direct the computer to draw a line or circle of desired dimension, create a desired shape, copy or remove selected material, increase or decrease size of a display to desired scale, or rotate a display to desired angle for three-dimensional viewing.

A "tracking cross" is used in conjunction with the light pen in generating lines or other graphic designs.

Previously, an engineer had to design a program, then, after it was run, study the printout. Changes needed then were programmed and rerun until acceptable parameters for the mathematical or design problem were obtained.

Time saved in the future through interactive computer graphics can be used to study more possible alternative systems, improve quality of the selected system, or work on other tasks.

"These alternatives represent management options for making decisions in the optimum use of our resources and maximizing profit that were not available under the old method," Bonine said.

"Interactive computer graphics enables the engineer to make better and more timely use of his decision-making abilities, while relegating a maximum amount of rote functions to the computer."

The two CDC-274 display screens being used in development of the interactive computer graphics capability in the Dept. 595-0 scientific computer facility at Lindbergh Field are connected to a CDC-1700 general purpose computer and related equipment, which in turn is linked by phone line to a CDC-6400 computer at the Kearny Mesa plant.

Programs being run on the two monitors share the same section of memory core in the 6400. Display on the screen is recycled 40 times a second to give the illusion of a constant display. Display monitors may be added later at Kearny Mesa.

"Convair recognizes the importance of this new technological approach to solving problems and is partially subsidizing the work in this area," Bonine said. "The system is expected to be self supporting in a year or so."

Representatives from 14 different engineering disciplines are working with Bonine on an IRAD integrated design project to demonstrate use of interactive graphics in design of selected sections of an A-X aircraft wing.

Participants and areas represented include Ron Ainsworth, loft; Glenn Bancroft, value engineering; Michael Cronk and Bob Westbrook, stress; J. A. Gesiakowski and J. E. Humphreys, loft/lines; R. I. Hagar, computer lab; Joe Hebert, aerodynamics; Walt Honeycutt, weight; Dick Huntington, dynamics; James Pardubsky, manufacturing development; D. W. Peterson, mechanical design; James Smith, structures; Sandra Yoshihara and Gary Oing, scientific computer lab; and Chet Moutrie, Rubin Huerta, and Roland Hagar, numerical control applications.

General "software" routines being developed for the project can be used in a wide range of future programs.

Forty from Convair recently completed courses in use of the new computer graphics system at Kearny Mesa and Lindbergh Field. Fifty-five others are enrolled for similar courses to begin late this month at the two plants.

Information about the system or the courses can be obtained by calling Bonine at ext. 2166 KM.

Mueller Slated For L.A. Speech

Dr. George E. Mueller, newly appointed General Dynamics vice president-programs and development, **(GD/NEWS, Dec. 17, 1969)**, will be a featured speaker at the 1970 National Telemetering Conference in Los Angeles, April 27-30.

Dr. Mueller

Dr. Mueller, former associate administrator for manned space flight for NASA, will keynote a special general session of the conference April 28 at the Hilton Hotel.

Included in the conference program is a special showing of lunar rock samples and Surveyor III accessories brought back to earth by Apollo 12 astronauts.

Two Convair division men, D. F. Hall and James Coste, will present a paper on "An experiment with VHF satellite and HF SSB communications for data collections from ocean data."

Space Program For Future Described

Dr. George E. Mueller, Corporate vice president-programs and development, is the author of a 22-page article, "An Integrated Space Program for the Next Generation," in the January issue of Astronautics and Aeronautics.

The article examines "the strategy, content, and logical sequencing" of the integrated space program.

Mist Filtration Units Ordered From ED by Osaka Newspaper

Seventy Dynapure mist filtration units have been ordered by Mainichi Newspaper Co. Ltd. of Japan from the Electro Dynamic operation of General Dynamics.

The systems will be installed directly onto presses to remove ink-mist air pollution at the source.

Each Dynapure unit purifies up to 300 cubic feet of air per minute, removing the ink particles hurled into the atmosphere by high-speed presses. The mist is collected by centrifugal action at press level and then drained into bottles. Purified air is returned directly to the pressroom.

Mainichi is one of the largest national newspapers in Japan, with headquarters in Osaka. This order is the 10th for installation of Dynapure systems on Japanese newspapers, with most major newspapers now equipped with these systems. Nichimen Co. Inc. is Electro Dynamic's agent in Japan.

More than 50 daily newspapers in the United States and Europe also are currently using Dynapure systems to keep their pressrooms clean and to safeguard the health of employes.

U.S. Tax Advice Offered Savings Plan Members

For General Dynamics employes who received a distribution on 1965 accounts in the Savings and Stock Investment Plan, in cash and General Dynamics stock, Corporate Headquarters has issued the following counsel regarding filing 1969 federal income tax returns:

"When completing the tax worksheet to determine the amount of gain reportable, there are a few points to keep in mind. First, the value of all fractional shares was paid in cash. So, in order to avoid reporting the value of fractional shares twice, make certain that you calculate the value of General Dynamics stock purchased with your savings and the Company's contribution (lines 2 and 3 of section 1 of the tax worksheet) based upon the actual number of whole shares distributed to you. Do not report the value of the shares shown in the upper portion of the Statement of Distribution furnished by the Bankers Trust Company, since these amounts include the value of fractional shares."

MONEY TALKS—Corporate financial personnel attending recent conference and seminar at Corporate Headquarters are, standing from left, Nick Colovus, Paul Kelly, San Diego; Art Husband, Fort Worth; Ray Fechter, Rochester; Larry Allen, Fort Worth; Dick Hoagland, Bob Morrissey, Groton; Brian Franz, Rochester; Murt Hunt, Quincy; Jack O'Neil, Fort Worth; Tom O'Brien, Quincy. Seated from left are: Frank Finneran, assistant to the director of internal auditing; David L. Thomas, Corporate comptroller; Edward Tucker, Corporate director of internal auditing.

Auditors Gather in New York For Annual Seminar, Briefing

General Dynamics' Corporate auditing recently held a year-end conference and seminar for company financial officers at Corporate Headquarters in New York.

Attending the meeting, held for briefings and Corporate-wide exchange of ideas, were David L. Thomas, Corporate comptroller, Edward Tucker, Corporate director of internal auditing, and Frank Finneran, assistant to the director of internal auditing.

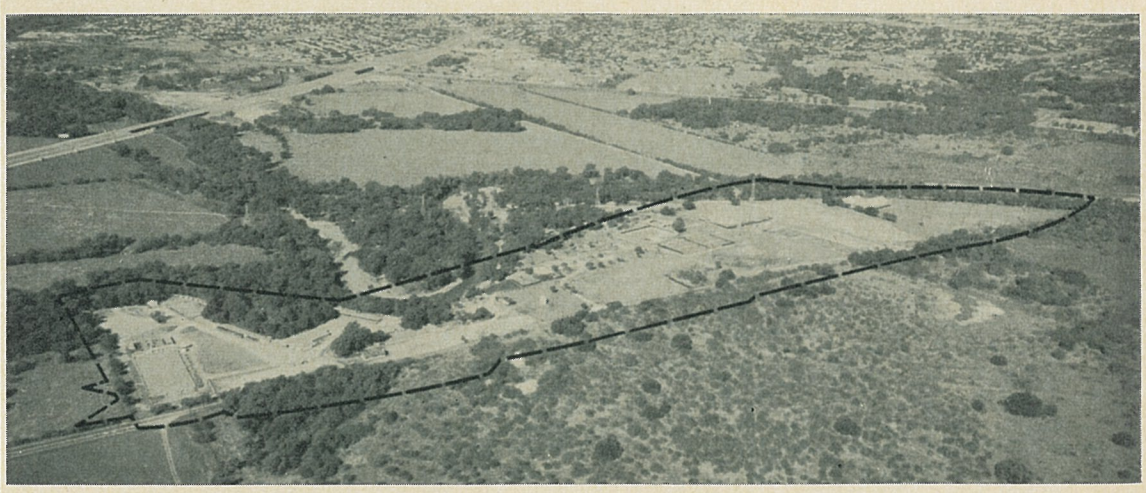
Also attending were regional office auditors: Nick Colovus and Paul Kelly, San Diego; Art Husband, Larry Allen and Jack O'Neil, Fort Worth; Ray Fechter and Brian Franz, Rochester; Dick Hoagland and Bob Morrissey, Groton; Murt Hunt and Tom O'Brien, Quincy.

Several presentations were made by Corporate officers and staffs. They included: Jim Ross, assistant comptroller and director of Corporate taxes, Ed Weyer, senior tax administrator, Bob Coyle, federal tax administration, Charles Massey, director of financial planning and analysis, Dick Roberts, Larry Besson, Bill Mearns, budget analysis, Paul Williamson, Corporate internal auditor, San Diego, Ben Carroll, management information systems, Warren Fedderson, director of manufacturing and facilities services, on facilities.

Industrial Security Society Honors Hale

I. B. Hale, manager of industrial security at Fort Worth division, was honored in Washington, D.C. recently at a reception as the president of the American Society for Industrial Security.

Numerous dignitaries attended the reception, held at the Washington Lawyers Club. They included Mr. and Mrs. Frank W. Davis; C. E. Puckett, Corporate director of industrial security; U. S. Supreme Court Associate Justice Tom C. Clark; and representatives of the Air Force, Navy, FBI, and Department of Defense.



BIRD'S-EYE VIEW—General Dynamics Recreation Area serving Fort Worth division, viewed from above, has profile similar to F-111's. It took eye of pro—Engineering Illustrator Editor W. E. McDaniel, Dept. 17-3—to catch similarity. Extensive facilities cover 83 acres, include swimming pool, stables, football and baseball fields, picnic areas, and spacious clubhouse with little theater and ballroom.

MAXIMUM MONEY—Robert L. Brooks, center, a production control coordinator in Convair's Dept. 059-5, receives $5,000 Employe Suggestion award check from J. M. Adamson, left, manager of Lindbergh Field operations, as W. R. Bruce looks on at right. Brooks received maximum allowable ES award for determining hard-anodize process could be eliminated on fixed-cowl air inlet duct doors for F-111 aircraft due to mechanical gap between them.

DC-10 Trijet Range Extended

Design improvements on the DC-10 series 30 tri-jetliner which will increase its range by more than 500 miles and its payload by five per cent have been announced by McDonnell Douglas Corp.

Convair division produces the wide bodied DC-10 fuselage at its Lindbergh Field plant.

A six-foot extension of the wing span is the only basic dimensional change being made, according to John C. Brizendine, Douglas vice president and general manager of the DC-10 program.

Additional fuel tankage will boost fuel capacity by 20,000 lbs. and maximum gross take off weight is being increased by 25,000 lbs. Design landing weight will also be upped.

The longer range is significant in that it will make possible direct air links between European capitals and U. S. west coast cities and between Europe and points in the Far East and South America.

Convair is engineering changes that will affect the fuselage structure. Pending definition of special customer requirements, only minor changes in body configuration are involved, according to Jack Hurt, Convair DC-10 program manager.

Three hundred DC-10 fuselages are to be produced by Convair under a McDonnell Douglas subcontract extending through 1974.

APPRENTICE HONORS — Donald Nowicki of Convair's Dept. 780-4, left, receives certificate marking completion of electronic apprenticeship program from Bill Barth, Dept. 780 general foreman. Nowicki also was named 1969 "Apprentice of the Year" for the division.

Nowicki Named Convair 'Apprentice of Year'

Donald Nowicki, a senior electronics technician in Convair division's electronics manufacturing Dept. 780-4 who completed his electronic technician's apprenticeship program Dec. 22, has been named "Apprentice of the Year" for the division for 1969.

Wayne Turner, apprenticeship program coordinator, said Nowicki was graduated from the four-year apprenticeship several months early because of outstanding performance on the job and in his college studies. The early graduation was recommended by his general foreman and was approved by the Joint Apprenticeship Committee.

As "Apprentice of the Year," Nowicki received a plaque and had his name engraved on a perpetual trophy displayed at the Convair educational services office.

Nowicki joined Convair in 1964 and worked in the tubing department at Lindbergh Field before beginning the apprenticeship in August, 1966. He received on-the-job training in all phases of electronic production and related activities, including testing, calibration, and research and development.

He will receive his Associate in Science degree in June from San Diego Evening College. Although he had completed enough units for the degree before the fall semester began, he is continuing his education by attending school three nights a week. His wife, Mary, is working toward a master's degree in social work at San Diego State College.

Police Reserve Project Aids in Youth Rapport

Hal Goerge, quality assurance representative at Electronics-SD for Defense Contract Administration Services District-San Diego, recently received a letter of commendation from O. J. Roed, San Diego chief of police, for his work as a police reserve officer in implementing a new "youth-rider program."

Under the program, Goerge and two other reserve officers each have taken four high-school-age youths in squad cars Friday and Saturday evenings during the past six months to give them a first-hand look at police work "in the field."

Hal Goerge

Each of the youth groups has toured police headquarters and been guests of the department for dinner — then from 7 p.m. to midnight has observed police action at disturbances, other criminal and civil incidents, accidents, fires, field interrogation and arrest scenes, and radar traffic control operations.

Officers at each location, after completing their work, have briefed the youths on problems involved and action taken and have answered questions.

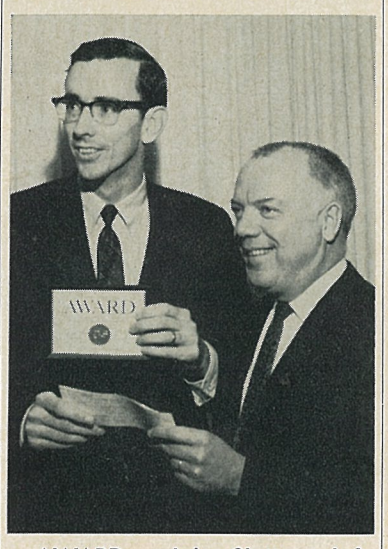
Participating youth have been referred by community organizations, ministers, and personnel from police community relations offices in the Logan Heights and Ocean Beach areas. Goerge said the program has helped establish meaningful dialogue and exchange of ideas between police and youths.

Chief Roed, in his letter, cited Goerge for "excellent performance" in helping make the program a success.

"You have demonstrated by the unselfish giving of your time and knowledge that you are interested in the future of our society and the police officer's role in it," he said. "The letters from the community commending the job you are doing are too numerous to acknowledge on an individual basis."

Goerge has been a San Diego Police Reserve officer three years, devoting about 300 hours a year of his evening and weekend hours, and formerly also served as a police reservist in Detroit. "It's a type of community service that offers a lot of self-satisfaction," he commented.

An employe of Department of Defense agencies for 21 years, he has been in San Diego six years and with Electronics-SD for two. He and four assistants monitor quality activities at Electronics-SD to ensure that all government contract requirements are met.



AWARD — John Slattery, left, Dept. 553-1, receives Employe Suggestion award for $1,337.60 from W. W. Fox, acting for vice president research and engineering. Slattery suggested new method of preparing program of DITMCO 660 network analyzer which checks wiring on various pieces of electronic equipment.

Congressmen Get Briefing

Members of the Subcommittee on Manned Space Flight, House Committee on Science and Astronautics, were briefed on Convair division programs this month in Los Angeles.

Lyman Josephs, Convair general manager, gave an overview of division products and a short introduction on how they fitted into the total manned space picture. M. R. Barlow, Dept. 952-0, manager of program development, discussed the status of current LVP programs and the space tug/orbit-to-orbit shuttle. D. J. Jones, Dept. 581-6, NASA requirements, space shuttle, gave an overview of future space programs, the earth-to-orbit space shuttle and the experiment modules.

Also present at the conference were Dr. Donald A. Dooley, newly appointed Convair vice president-space programs, and Wally Withee, Dept. 500-0, director advanced space systems.

Members of the committee present were Don Fuqua (D-Fla.), Larry Winn Jr. (R-Kan.), Robert Price (R-Tex.), Louis Frey Jr. (R-Fla.) and James E. Wilson and Harold A. Gould, technical consultants. John Lyle and R. Allnutt represented the NASA Office of Manned Space Flight.

ASQC Section Plans March 9 Gathering

The San Diego section of the American Society for Quality Control will meet at 6:30 p.m. Monday, March 9, at the Catamaran Hotel.

Speaker will be S. S. Kozich, director of quality assurance, Atlantic Research Corp. Sponsor is DCAS.

Adventurers Set Carrizo Outing

CRA Adventurers Club will spend Feb. 21-23 in the Anza-Borrego Desert near the Carrizo Wash and Dos Cabezas Spring.

Several special activities are planned for the three day weekend including visits to historic sites and Indian encampments and a backpack trip averaging six miles per day.

Outing leader is Joe Quijada. A dry campsite is slated and members should bring water and wood. Warm clothing for the desert night temperatures is also advised.

For details and backpack food and water information contact Quijada, ext. 1754 KM or 282-5919, or Everett Ames, assistant leader, ext. 3674 KM or 459-6412.

The club's regular meeting tonight (Feb. 18) at the CRA Clubhouse auditorium will feature a "Desert Flowers of the Southwest," color slide presentation by Dr. Dudley A. Preston, associate professor of botany at San Diego State.

A slide review of the club's last outing also is slated. For information contact John Anderson, ext. 1469 LF.

Big Bear Weekend Space Available

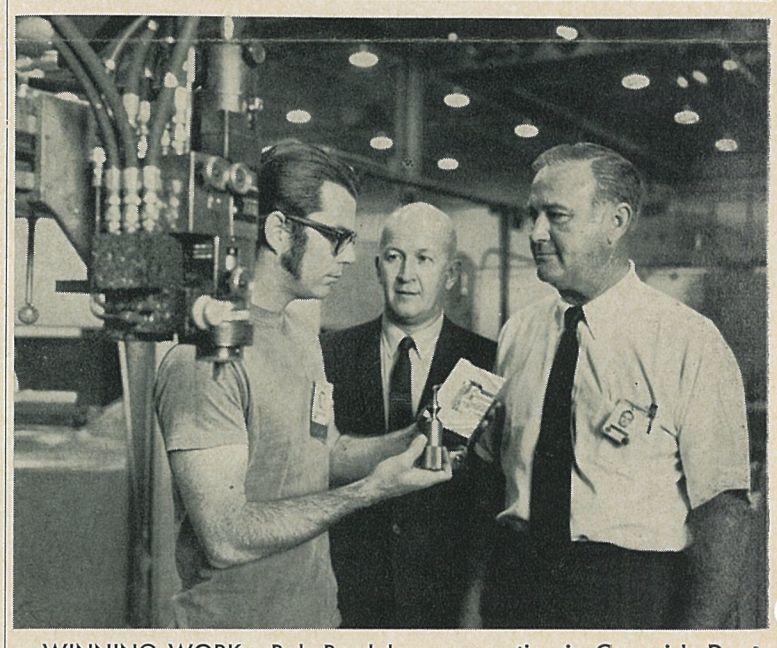
CRA Ice Skating Club has space still available for its 17th annual winter weekend at Big Bear Lake, March 6-8.

The entire Wawona Lodge has been leased, consisting of ten rooms with private baths for two to five persons and 18 family cabins for groups up to 12.

Cost of the weekend is $15 which includes two night's lodging and three meals. Children under eight years can attend for half price. Meals will be prepared professionally and served with volunteer assistance from the group.

No formal activities are scheduled but a variety of recreational facilities will be open. Skiing will be available on machine-made snow at three locations if there has not been adequate natural snowfall. The Big Bear ice rink, closed since its roof caved in from last winter's heavy snows, is scheduled to be reopened.

For reservations contact employe benefits outlets or CRA Clubhouse. For additional information call June Reiger, ext. 1111 KM; Bud Davies, ext. 2844 KM; or Joan Kosen, 274-5227.



WINNING WORK—Bob Bordelon, apprentice in Convair's Dept. 452-0, left, discusses his two-piece part that won local machinists' tool and die contest with Wayne Turner, center, apprenticeship program coordinator for division, and G. A. Grossaint, Convair chief of tool manufacturing-research and development.

Bob Bordelon Winner in Annual Seven-Hour Tool and Die 'Race'

Bob Bordelon, a tool and die apprentice in Convair's Dept. 452-0 at Kearny Mesa, edged out six other division apprentices Jan. 31 to take first place honors in an annual seven-hour machinists' tool and die competition at San Diego City College.

He will represent Convair in Los Angeles March 12 and 13 in a statewide contest sponsored by the Los Angeles Tool and Die Association.

Apprentices in the local contest were given identical plans for a two-piece part, designed by Robert J. Connell of Convair's Dept. 400-2 to test their abilities in use of a lathe, milling machine, a jig bore machine, and a variety of hand tools.

Each had machines and tools in the City College machine shop at his disposal for the seven-hour contest period. Judges were Willard Blackington, head of the college's machine shop department; John Williams of Convair's Dept. 407-0; and Wayne Turner, apprenticeship program coordinator for the Convair educational services section.

Competing, in addition to Bordelon, were Bill Allen of Dept. 401-4, Bill Marks of Dept. 451-0, Walter McCollum of Dept. 015-0, Ron Pinney of Dept. 401-4, Amos Todd of Dept. 015-0, and Richard McAdams of Dept. 731-0.

Allen and Pinney are tool and die apprentices, Marks is a jigs and fixtures apprentice, and McCollum, Todd, and McAdams are machinist apprentices.

GARDEN CLUB

Convair Garden Club recently elected their 1970 officers. They are: Irene Adams, Dept. 149-0, president; Henry Boyd, Dept. 045-0, vice president; Mrs. Richard Miller, retired, secretary.

MULTIPLE HONORS—Convair's Atlas-Centaur launch team at Eastern Test Range receives NASA Group Achievement award and OAO-2 Project Team Launch Operations Support award. Displaying awards, from left, are O. H. Reed, Convair ETR operations manager; Robert Gray, NASA director of unmanned launch operations; Dan Sarokon, Centaur site manager; and John Gossett, NASA chief-Centaur operations branch, unmanned launch operations. Atlas-Centaur launch operations personnel at ETR also recently received NASA's Accident Prevention Award for one million manhours without a lost-time accident.

Careers Day Conference First Of Engineering Week Events

Seven from Convair division will take active parts in promoting local observance of National Engineers Week Feb. 22-28.

Theme for this year's nationwide fete is "Environmental Design for the '70s," engineering's role in clearing up pollution and prevention of future environmental abuse.

R. D. Kesler, Dept. 572, C. G. Perdue, Dept. 565, H. E. Kobrich, Dept. 491, E. G. Kiener, Dept. 250, H. C. DeKleine, Dept. 491, E. Herz, Dept. 554, and G. E. Vail, Dept. 589, all members of San Diego Engineering Council and various engineering societies, will handle badge and banquet ticket sales.

San Diego observances consist of a Careers Day Conference today (Feb. 18) at the Town and Country Hotel's Tiki Hut and a Feb. 27 dinner banquet at the Hanalei Hotel.

The Careers Day event will be a panel discussion led by four local engineers and a moderator. Some 100 vocational counselors from area high schools and junior colleges are expected at the question and answer session.

The future of engineering, modern engineering practices and developments and qualities that today's companies seek in their young engineering personnel will be topics of discussion.

Keynote speaker at the Friday banquet will be Louis Fuller, chief air pollution control officer for the Los Angeles Air Pollution Control District. Wives and guests of local engineers are invited.

Badge and ticket sales proceeds are earmarked for a $500 donation to further higher education. Cash award is slated to be made during the banquet.

For further information and badge and ticket purchases contact Kobrich at ext. 517 LF or DeKleine at ext. 3382 KM.

Heat Shield Devised For Uprated Atlases

An improved thrust-structure heat shield has been developed for Atlas SLV-3A and SLV-3C boosters because it was determined uprated engines for use with the vehicles will require the shields to withstand higher temperature levels.

A ⅜-inch-thick specimen of Armstrong Insulcork 2755, bonded to the presently-used thrust-structure honeycomb surface, was found acceptable after tests in which it was subjected to 5,200-degree F. heat and random vibration.

Initial tests were conducted in the division's simulated entry and aerothermodynamic research (SEAR) facility. Subsequent tests utilized the radiant lamp test facility and vibration lab equipment.

Propulsion Order On Atlas Awarded

The Air Force has awarded a $2.5 million contract to North American Rockwell Rocketdyne division for fabrication, acceptance test, and delivery of seven propulsion systems for the Atlas booster.

The contract calls for three main liquid fuel rocket motors and two vernier or directional engines for each of the seven propulsion systems, to be delivered to Convair in San Diego.

Meeting Scheduled On European Tours

There will be a meeting on the CRA European charter tours at 7:30 p.m. Tuesday, Feb. 24, at CRA Clubhouse.

Three tour programs will be discussed and reservations will be accepted. Tours leave San Diego on May 3.

Cost of the grand tour is $695, of the Scandinavian air/sea tour is $875, and of the Spain tour is $845. All programs include jet travel from San Diego to Copenhagen and return from London.

Tour programs include hotels, land transportation, transfers, baggage handling and tips, sightseeing, and guide service. Tours are escorted from arrival to departure. Approximately two-thirds of the meals are included.

Air transportation only is available for $335. For information call ext. 1111 KM.

E. W. Carlson Heads Local I-E Council

Edmond W. Carlson, electronics group engineer in Convair's Dept. 533-3, was elected president and chairman of the board of the Greater San Diego Industry-Education Council at the organization's annual meeting Jan. 21.

Jack Croft, Convair chief of educational services, was elected to the board of directors.

The Industry-Education Council serves as a communications link between educational institutions and the professions and industries in the San Diego area and coordinates several programs to assist students interested in scientific careers.

Carlson has been a member of the I-EC board four years and served as vice chairman last year and as treasurer in 1967 and 1968. He has been with Convair since 1956 and is a past chairman of the San Diego chapter of the Institute of Electrical and Electronics Engineers.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Feb. 24. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

ADVENTURERS—Meeting tonight (Feb. 18), 7:30 p.m. Camping trip to Anza-Borrego Desert Feb. 21-23.

ARCHERY—Club reorganizing, for information call Al Stone, ext. 471 LF.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BALLROOM DANCING—Instruction courses held Mondays, 7:30 p.m.

BICYCLE CLUB—Oceanside, 50-mile ride, 7:30 a.m., Feb. 28, meet at Salk Institute. Point Loma, 12-mile ride, 2 p.m. March 1, meet at Islandia.

BONAIR FLYERS—Meet March 1, 7:30 p.m.

BRIDGE—Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB—Photo field trip to desert March 1, meet Mountain Springs Grade, 9 a.m. Non-members invited.

CHESS—Meeting, Feb. 25, 7 p.m.

CHORUS—Rehearsals Mondays, 7:30 p.m.

FENCING—Workout and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GOLF—Cottonwood tournament, Feb. 22-23, tee-off 7 a.m.

GUN CLUB—Fun shoot, Feb. 22, 9:15 a.m., Gillespie Field gun range.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m., Monday through Thursday; 9:30 a.m. to 9 p.m. Fridays; 10 a.m. to 5 p.m. Saturdays; "Women only" weekdays, 9:30 a.m. to 11 a.m.

ICE SKATING—GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1.00 (including skates).

JUNIOR SCIENCE—Meeting Feb. 20, 7:30 p.m.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Wednesday, 7 p.m. CRA Missile Park.

ORGAN CLUB—Meeting Feb. 24, 7 p.m., in the home of Mr. and Mrs. Frank Wisenberg, 3521 Mt. Acadia Blvd.

PISTOL CLUB—Shoot Feb. 22, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RIDING CLUB—Senior and junior riding instructions to start March 1, registration deadline Feb. 20.

RIFLE CLUB—Senior shoot Feb. 25, 7 p.m. Junior shoot Feb. 21, 9 a.m. Gillespie Field Range.

ROAD RUNNERS—Meeting Feb. 26, 7:30 p.m., Gillespie Field Clubhouse.

ROLLER SKATING—GD family skate night March 16, 6:30-9:30 p.m., Skateland, Front & G Sts. Tickets (5 cents) at employe benefits outlets.

SAILING—Meeting Feb. 25, 7:30 p.m. Seamanship 13-week course starts Feb. 24, 7-9:30 p.m.

SQUARE DANCE—Dance Thursday, 8-10 p.m.

SWIMMING—Family swim night Feb. 21, 7-9 p.m., Mission Beach Plunge, tickets (5 cents) at employe benefits outlets.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays, 10 a.m.-4 p.m.

TENNIS—Tournament starts Feb. 21 at CRA tennis courts.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamic Toastmasters No. 457, Thursdays, 5:30 p.m.

TOURS—European tour meeting Feb. 24, 7:30 p.m. Tours to leave May 3.

TRAILERS—Meeting Jan. 6, 7:30 p.m.

Convair Archers Planning Revival

Convair Archery Club is attempting to reorganize.

Prospective archers are invited to Wednesday evening shoots at Sunshine Archery Lanes, 624 Broadway, San Diego. All shooting is indoor variety and each round takes about 2½ hours. Enough response will enable the club to lease the lanes one night per week with a cost per shooter of approximately $1.

For information call Al Stone, archery commissioner, ext. 471 LF.

Surveyor 3 Parts Returned to Hughes

Components of Surveyor 3, launched April 17, 1967, by Atlas-Centaur 12, have been returned to their makers at the Hughes Aircraft Co. Culver City facility.

They have been on the moon since April 19, 1967, and were retrieved by Apollo 12 astronauts in November. Surveyor 3 was launched in the first Centaur two-burn operational mission.

Distance Running Merits YMCA Honor

Ray Behlman, Dept. 831-1, has been named "Runner of the Year" for 1969 in the YMCA sponsored Run for Your Life Program.

Behlman ran 1,500 miles during the year and was awarded a trophy by the YMCA. He is also a past president of Convair Toastmasters 3745-5.

Winter Tennis Tourney to Begin With Mixed Doubles Play on Sat.

The CRA-Convair Management Club winter tennis tournament will begin this weekend with mixed doubles play at 9 a.m. Sat., Feb. 21, at CRA tennis courts, Kearny Mesa.

The complete schedule for the tournament is:

Mens singles: advanced, 9 a.m. March 14, 15 at Mesa College; intermediate, 9 a.m. Feb. 28, March 1, Morley Field; novice, 1 p.m. March 1, Morley Field.

Mens doubles: advanced, 9 a.m. March 21, 22, Mesa College; intermediate, 9 a.m. March 7, 8, Morley Field; novice, 1 p.m. March 7, 8, Morley Field.

Women's singles: intermediate, 9 a.m. Feb. 28, CRA; novice, 9 a.m. March 1, CRA.

Mixed doubles: 9 a.m. Feb. 21, 22, CRA.

Entries are due Wednesday before the scheduled date.

Tournament chairman is Bob Herold, mail zone 144-10, ext. 2360 KM. Tournament committee is Cecil Norwood, ext. 2821 KM, advanced division; Milt Kreml, ext. 2811 KM, intermediate division; Manuel Fernandez, 279-8014, novice division; Thelma Zivolich, 233-1575, womens division; Dave Gorham, ext. 3382 KM, mixed doubles.

Cottonwood Tourney Feb. 21-22 Kicks Off Golf Club Schedule

CRA Golf Club has scheduled a tournament this weekend (Feb. 21 and 22) at Cottonwood Country Club's Monte Vista course. Winners will be awarded trophies.

Starting time each day will be 7 a.m. Sign-up for tee-off times can be made and additional information may be obtained by calling T. G. Champlin, tournament director, ext. 511 LF.

Following is a schedule of dates, starting times, and locations for other monthly tournaments scheduled this year by the club:

March 14-15, 7 a.m., Los Penasquitos

April 11-12, 7:30 a.m., Coronado

May 10-11, 7 a.m., San Carlos

June 27-28, 6:30 a.m., Escondido Country Club

July 18-19, 7:30 a.m., Rancho Bernardo

Aug. 1-2, 7 a.m., Coronado

Sept. 19-20, 7 a.m., The Meadows

Oct. 18-19, 7 a.m., Los Penasquitos

Nov. 21-22, 7 a.m., Carlton Oaks

Rate Offered On Tickets

Reduced price tickets are on sale at all CRA and employe benefits outlets for the following events:

"Hello Dolly," 8 p.m. Sunday, Feb. 22, at College Theater, $3 admission for $2.40.

San Diego Gulls vs. Vancouver Canucks, 7 p.m. Sunday, Feb. 22, at Sports Arena. $3 seats for $2.25.

Indoor track meet, 6:30 p.m. Friday, Feb. 20, at the Sports Arena. $5 seats for $4; $4 seats for $3.

Also available are coupons good for discounts to:

Ferrante and Teicher, 8:30 p.m. Friday, Feb. 20, San Diego Civic Auditorium, $1 off.

Fred Waring and the Pennsylvanians, 8 p.m. Sunday, March 1, San Diego Civic Auditorium, $1 off.

Jose Greco with Nana Lorca, 8:30 p.m. Monday, Feb. 23, at San Diego Civic Theater, 50 cents off.

Volunteers Needed For Railroad Work

CRA Model Railroad Club has called for volunteers to assist with construction of a new HO-scale railroad pike at CRA Missile Park.

No experience is necessary and help is especially needed laying track, setting up switch networks, and placing ballast.

Work sessions are being held Wednesday evenings at 7 p.m. and on weekends. Model railroad set-ups are located adjacent to the miniature railroad station.

For information and to volunteer call Willard Jones, ext. 1582 KM.

Bicyclists to Pedal To Oceanside Feb. 28

The CRA Bicycle Club will pedal 50 miles to Oceanside beginning at 7:30 a.m. Saturday, Feb. 28. Riders will meet at the Salk Institute. Ride leader will be Dick Dege.

On March 1, the club will take a 12-mile ride to Point Loma starting at 2 p.m. from Islandia under the leadership of Alan Conolly.

For information call Dave Lukens, ext. 2881 KM.

Camera Club Plans Desert Field Trip

CRA Camera Club has scheduled a desert field trip Sunday, March 1 at 9 a.m.

The photo field journey will start from the foot of Mountain Springs Grade and will be conducted by K. K. Rinker. Interested guests are encouraged to accompany the club.

For information contact Erich Wolf, club president, ext. 2507 LF.

Jerry Lehrer Wins In Expert Class

CRA Pistol Club marksman Jerry Lehrer won a close race in expert class competition in the club's Feb. 8 matches at Police Pistol Range.

Lehrer's tally of 283-7x barely nipped Charles Kropp, 279-6x, and Richard Sutton, 279-5x who were separated by only an "x" or center bulls-eye point.

Results of other matches were: masters — Roland Schneider, 296-10x; Don O'Brien, 291-9x; sharpshooter — Veronica O'Brien, 233; James Thomas, 224-2x; center fire — Don O'Brien, 279; Kropp, 260; Schneider, 258; Jim Halfacre, 254.

Next match is Feb. 22 at 9:15 a.m., Police Range.

Course in Piloting Will Start Feb. 24

A 13-week course in small boat piloting and seamanship will be conducted for employes and families 7-9:30 p.m. Tuesdays at CRA Clubhouse beginning Feb. 24.

R. J. Cook, Dept. 130-1, will instruct. Sponsor is the Mission Bay Power Squadron. There will be no charge except for a textbook.

Material covered will include safety afloat, seamanship, aids to navigation, small boat handling, rules of the road, and the compass and charts.

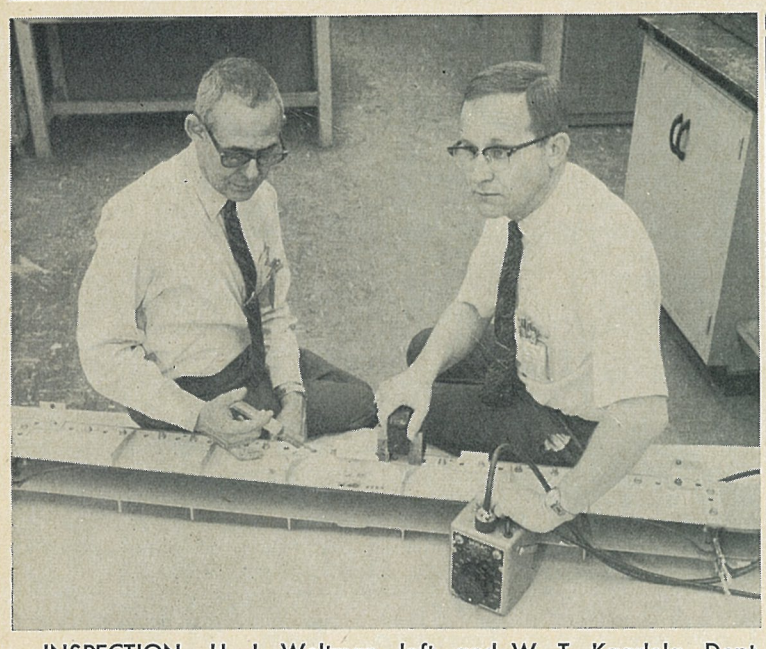
For information, call Cook at ext. 3731 KM.

CHESS PLAYERS TO MEET FEB. 25

The CRA Chess Club will meet at 7 p.m. Wednesday, Feb. 25 at CRA Clubhouse. For information call Jack Maughmer, ext. 2659 KM, Art Greensite, Ext. 2185 or 1796 KM or Pete Beyrer, ext. 1111 KM.

RIDING LESSONS DEADLINE SET

Registration deadline for horseback riding lessons sponsored by CRA Riding Club is Friday, Feb. 20. For information call Len Sidock, ext. 1757 KM or 291-0439.



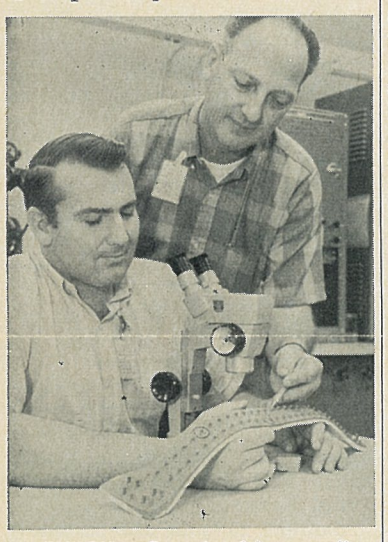
INSPECTION—H. J. Weltman, left, and W. T. Kaarlela, Dept. 064-6, carry out steps in Fort Worth division's new Magnetic Rubber Inspection technique — injecting liquid rubber containing magnetic particles and magnetizing F-111 test specimen.

Novel Rubber Process Detects Metal Flaws

Magnetic particles in liquid rubber are being used by Fort Worth division metallurgists to detect the tiniest cracks in some metals.

The process, called Magnetic Rubber Inspection (MRI), creates a rubber replica of the part in which flaws can be seen visually.

First step in the MRI process is to pour liquid rubber containing magnetic particles over or into the metal part. The area is then magnetized.



CHECK—Cured rubber replica of part is inspected by J. D. Reynolds, left, and J. E. Halkias. Cracks and other flaws show up as "black lines" on replica.

A small magnetic field which arises in the area of a crack or flaw attracts the magnetic particles in the rubber, causing a "buildup" near the crack.

The rubber is allowed to set for from 20 minutes to eight hours, depending on the area to be inspected and time available. After the rubber cures, or hardens, it is removed for visual inspection.

"A crack in the metal will show up as a black line of metalic particles against the whitish-color rubber replica," says W. T. Kaarlela, project engineering metallurgist.

The rubber not only shows cracks and flaws, but other conditions such as smoothness, drill-damage, alignment, and dimensional accuracy.

"We've used the technique successfully in evaluating certain B-58 and F-111 parts," Kaarlela said. "The technique has been especially helpful in inspecting drilled holes.

"In some cases we've been able to examine holes which couldn't have been examined by any other method because of their location or shape."

Kaarlela said cracks as small as .002 inches deep by .004 inches long have been detected. The MRI technique is used to inspect for cracks both before and after testing; to make dimensional and fit-up checks; and to monitor the growth of cracks once detected.

"Two groups of holes in one part — including a ⅛-inch rivet hole and various threaded holes — could not have been tested any other way," Kaarlela said.

Rubber replicas are graded A (definite crack), B (possible crack or flaw), or C (no-crack).

The inspected area can be easily demagnetized by applying an AC electromagnet. And the part may be cleaned with a regular solvent.

Test specimens coated with paint, plastic or non-magnetic metal require more magnetism than bare surfaces.

The technique won't work, of course, on non-magnetic materials such as aluminum and titanium, even though "excellent" replicas of surface contours can be obtained. "However," said Kaarlela, "we're working on a development program for these materials which has shown great promise."

Kaarlela said the MRI technique can be used with only minor initial equipment installation and practically no maintenance cost.

Further, the rubber solution is easily blended in-plant or can be supplied by a vendor. Addition of catalyst before inspection can be easily done by an inspector, who requires little training.

Kaarlela heads the MRI research team, which includes H. J. Weltman, who has a patent pending on the process, J. E. Halkias and J. D. Reynolds.

Submarine Tankers

Famed Polar Flyer Forecasts Vital Resources Role in Arctic

The oil reserves of Alaska's North Slope are just a small portion of the natural resources that will be opened up in the Arctic within the next few decades, according to Col. Bernt Balchen, famous explorer and consultant to General Dynamics.

Balchen, one of the world's foremost authorities on the polar regions, believes that General Dynamics equipment — submarines, surface vessels, communication systems and tracked vehicles — will play an important role in bringing oil, ore and minerals from beyond the Arctic Circle for world industry.

Balchen, a solid, stocky man whose white hair, piercing blue eyes and bronze complexion make him look much younger than his 70 years, was recently honored by the Norwegian government for his part in the founding of Scandanavian Airlines Systems (SAS) and for his role in rebuilding Norway's military and civilian aviation after World War II.

Typically, his trip to Oslo was primarily on business: to discuss with Scandanavian industrial and shipping executives how their experience in working in cold climates could be teamed with the technical and shipbuilding skill of General Dynamics.

"From their whaling expeditions," Balchen points out, "the Norwegians have captains and crews who understand how to live and work in polar seas. Add to this their long experience with oil tankers and the fact that the sea lanes across the Arctic will cut to one third the distance between Europe and Asia and we have an opportunity for the type of submarines and ships that can be built by General Dynamics' yards."

BERNT BALCHEN

Balchen's interest in the Arctic dates back to his early career with the White Army in Finland, and, subsequently, as a pilot with the Royal Norwegian Air Force. He was a member of the Norwegian Olympic cross-country skiing team in 1920 and 1924.

He is probably best known as the pilot for Admiral Richard Byrd's flight over the South Pole and, before that for Roald Amundsen in his explorations at the North Pole.

After becoming a naturalized American, Balchen was transferred from the Royal Norweigian Air Force to the U. S. Army Air Corps in 1941. In one assignment he commanded 5,000 men who built and operated supply-staging bases in Greenland for Allied troops. Later, his air squadrons brought more than 5,000 people out from Nazi-held territory and destroyed the heavy water plant in Norway where the Germans were developing materials for atomic reesarch.

From his experience in building Thule Air Base in Greenland and heading search and rescue operations in Alaska, Colonel Balchen gained first hand knowledge of the problems which are now being faced in attempting to bring oil from the North Slope.

The greatest potential of the Arctic, he believes, is yet to be realized. More than 30 years ago, he recalls, in flights over Baffin Land, he saw oil slicks on the ice and surface indications of iron ore. Later, surveys by the Canadian government uncovered high-grade iron ore estimated at more than 100 billion tons.

To tap these reserves, the Colonel believes, will require a combination of undersea submarines, huge surface tankers, ice breakers and land-based equipment such as snow-traveling cargo trucks.

"General Dynamics has unusual skills and experience in all of these types of transportation equipment," he says. "The submarine tanker has the advantage of being able to go beneath the ice and travel swiftly and safely. We already have solved the most critical problems of design and power so it's now pretty much a question of building a boat big enough to economically haul oil and, eventually, ore and minerals."

"The first requirement for any type of transportation," he adds, "is a docking-shipping storage area. This will probably be half on land and half under the ocean. At Thule, we proved that it is possible to build in subzero conditions. All we have to do now is to use the same techniques on a far larger scale."

"It will probably not be in my lifetime" he adds, "but many young people will live to see the day when a large share of the resources needed for industry will be shipped from the Arctic. Even more important will be the regular top-of-the-world shipping lanes which will bring the world more closely together, and, let us hope, play an important role in bringing peace."

NASA Drafts List of Cost Actions Helpful in Reducing Expenses

The NASA Cost Reduction Office has released a list of cost reduction actions which "affect the ultimate costs of both government and business operations."

The list was compiled in response to queries on how to implement cost reduction programs that continue to find savings after the more obvious actions have been taken.

Ed Heller, Convair manager of cost reduction and value control, said the list is particularly effective both as a check list for future cost reduction projects and also to identify existing projects that could be eligible for cost reduction credit.

On the NASA list are:

Reduce the distribution of documents and reports, combine or eliminate; turn in equipment and supplies not needed; clean out and turn in file cabinets; eliminate forms; increase productivity; eliminate border line travel requirements.

Save on mailing costs; use surplus instead of new materials; eliminate telephones; reduce the use of electricity and other utilities; value improve specifications; reduce the cost of processing purchase orders; find and use less costly vendors; substitute satisfactory lower cost items.

Reduce equipment rental costs; perform the job on time and reduce overtime; eliminate unnecessary cleaning requirements; schedule work to improve efficiency; submit well thought-out Employe Suggestions.

Reduce some requirements for testing; relax a "too tight" tolerance or a "too bright" finish; reduce contractor's costs; reduce shipping cost-consolidate shipments; reduce reproduction requirements; improve maintenance procedures; reduce frequency of reporting.

Eliminate unnecessary meetings; reduce computer print-out requirements; extend the shelf life of supplies; reduce classification requirements; use the less costly of automated vs. manual procedures; simplify checkout and test procedures; reduce contractor reporting requirements; consolidate storage; standardize where possible; use other division surplus; take better care of instruments.

Release unneeded office, shop or storage space; consolidate deliveries; rearrange work areas for improved efficiency; eliminate or reduce graphics requirements; use less costly methods and materials; eliminate, reduce, or combine requirements at no loss of effectiveness of function.

Von Braun Appointed To New NASA Post

Dr. Wernher von Braun, director of NASA Marshall Space Flight Center, will become NASA's deputy associate administrator for plans, effective March 1.

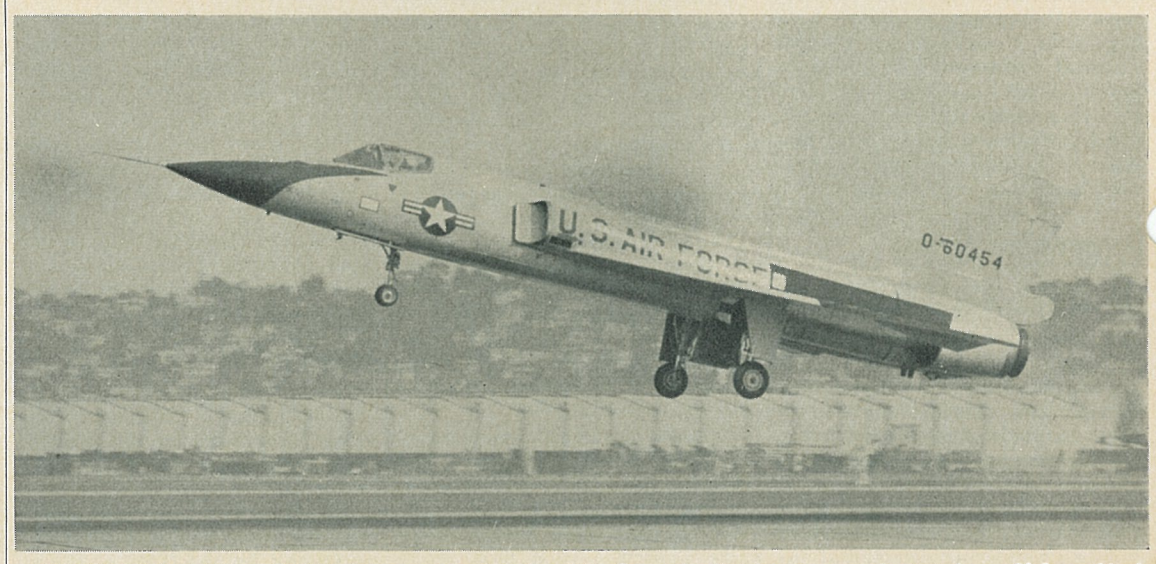
He will be succeeded at the Space Flight Center by Dr. Eberhard Rees, currently deputy director.

In his new position, Dr. von Braun will become the "chief architect for future space missions." He will work out of NASA's Washington headquarters.

General Dynamics is an Equal Opportunity employer.

ATLAS LAUNCHED AT VANDENBERG

Atlas 96-F was launched successfully Feb. 8 at Vandenberg AFB as part of the Advanced Ballistic Re-Entry Systems (ABRES) program.



TRANSONIC TEST—F-106 interceptor, involved in Convair division test project, takes off from Lindbergh Field for first transonic flight stress and maneuvering buffet tests. Visible aft of Air Force marking is Convair aluminum-boron door which is being tested for structural stress.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 23, No. 5 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, March 4, 1970

Contracts From SAMSO Valued At $12½ Million

Three contracts totaling $12,531,500 have been awarded to Convair by the Air Force Space and Missile Systems Organization (SAMSO).

The contracts cover launch services at Cape Kennedy (ETR), Vandenberg Air Force Base (WTR), and logistic support services.

The $6,854,400 launch services contract for ETR covers two years, from Jan. 1, 1970 through Dec. 31, 1971. The WTR launch services contract is for $4,090,800 and runs from Jan. 1 to Dec. 31, 1970. The two contracts are follow-ons to previous launch services contracts.

Both contracts call for Convair to direct the preparation of boosters and launch sites, certify their readiness for launch and conduct launches during the period of performance.

These tasks include day-to-day upkeep, preventive maintenance and management of designated equipment, receipt, inspection, checkout, maintenance, assembly and erection of the booster and conducting launch activities.

Launch activities include compatability checks, countdown operations, prelaunch tests, instrumentation calibration, launching, and site cleanup and refurbishment after launch.

The third contract is for $1,586,300 for logistics support and inventory management services.

The contract calls for Convair to perform Atlas E/F inspection, repair, and modification tasks in the factory as well as Atlas E/F and SLV servicing at ETR and WTR. The contract is essentially a supplementary contract to the two launch services contracts and furnishes the necessary funds for spare parts and necessary equipment replacements.

INTERNATIONAL EFFORT—Viewing delivery operations of Convair-produced DC-10 fuselage sections last month (top photo) were members of Aerfer Industrie Aerospaziali Meridionali, Naples-based Italian subcontractor which produces above-floor-level skin panels for fuselages. Witnessing loading of E Section (over-wing) were, from left, Phil Eramo, Convair Italian-English interpreter; Enrico D'Addio, Aerfer technician; Enrico Rusch, Aerfer chief of contracts; Russ Babcock, Convair manager of outside production; Adolfo Bartoli, Aerfer vice director of production; Gerardo DiGiorgio, Aerfer resident representative at Convair. In bottom photo General Adolfo Varini (ret.) Aerfer director of commercial affairs (left), meets with Babcock during first in series of discussions leading to updating Aerfer's subcontract to reflect current conditions.

First Complete Shipset For DC-10 Delivered

Convair division last month completed delivery of its first DC-10 fuselage shipset to prime contractor Douglas Aircraft Co's. Long Beach, Calif. plant.

Convair produces 127 feet of the 180-foot fuselage, all but the nose and tail sections.

Delivery of Convair-produced sections E and F/G marked the culmination of nearly 18 months of design, tooling, fabrication and assembly efforts by Convair. The first C/D section was delivered in January.

In addition, C/D section for shipset No. 2 was completed and delivered during February.

The first fuselage sections will

(Continued on Page 2)

Board to Propose Expansion to 14

Roger Lewis, chairman and president of General Dynamics Corporation, announced last week that the Board of Directors would recommend a slate of 14 directors, including six new nominees, to be voted on at the coming annual meeting, April 29, 1970. At present, the board has nine members with two vacancies.

Lewis said that Colonel Henry Crown and Nathan Cummings, who recently announced substantial purchases of General Dynamics stock, had been invited by the board to become members of the board. Colonel Crown, who was chairman of Material Service Corporation prior to its merger into General Dynamics at the end of 1959, served on the General Dynamics board from 1960 to 1966 and was chairman of its executive committee. Cummings is chairman of the executive committee of Consolidated Foods, Inc. and was formerly its chairman.

Colonel Crown and Cummings recently announced that they had entered into an agreement, subject to Securities and Exchange Commission approval, to purchase 526,400 shares of General Dynamics common from the Dreyfus Fund, which would raise their holdings to a total in excess of 18 per cent.

Other new directors would be: Robert V. Hansberger, chairman and president of Boise Cascade Corporation; Albert E. Jenner, senior partner of the Chicago law firm of Jenner & Block; Homer J. Livingston, senior director and chairman of the executive committee of the First National Bank of Chicago, and Stanley deJ Osborne, a partner of Lazard Freres, New York investment bankers.

Present directors to be included on the management slate, in addition to Lewis are: William C. Bolenius, formerly vice chairman of the board of AT&T; H. S. M. Burns, formerly president and chief executive officer of Shell Oil Company; Sylvan C. Coleman, chairman and chief executive officer of E. F. Hutton & Co., Inc.; John F. Floberg, vice president and general counsel and a director of the Firestone Tire & Rubber Co.; Maurice T. Moore, a partner of the New York law firm Cravath, Swaine & Moore; Eric A. Walker, president of Pennsylvania State University; and Leo D. Welch, formerly chairman of the board of Standard Oil Company (New Jersey) and chairman and chief executive officer of the Communications Satellite Corporation (COMSAT).

Lewis said the expanded board, with its broad background of experience, should prove particularly valuable as the company increasingly orients itself to new growth possibilities.

Lewis said that John A. Sargent would not stand for reelection to the board and that his resignation as vice president and chief financial officer of the Corporation, effective April 30, had been accepted by the board with regret.

Value Control Savings in '69 Top $8 Million

Nineteen Convair division research and engineering department men were awarded commendation certificates last month for fourth quarter 1969 value control projects (VCPs) and value engineering change proposals that will save $1,278,300.

This brought the 1969 value control savings to $8,346,100 — topping the goal for the year of $6.5 million by 28 per cent.

Structural design (Dept. 511) was also awarded the departmental yearly value control trophy for their savings of $3,324,700 for the year. Fourth quarter honors went to Dept. 532 mechanical design, for their savings of $569,500 during the three months ending Dec. 31.

W. W. Fox, director of F-102/106 interceptor program, presented both trophies and the certificates on behalf of R. E. Adams, vice president-research and engineering.

One VECP credited to Robert Young, Dept. 566-2, resulted in an estimated value improvement savings of $329,700. Young's pro-

(Continued on Page 2)

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—Can something be done to improve the food at lunch stands at Lindbergh Field? For many of us the cafeteria is too far away and although the stands start with hot food it isn't long before it's not so hot.

A—Yes. A new self-service canteen facility is being installed near LF Bldg. 33 this month. Of modern design, it will be adequate for all food service, hot and cold.

★ ★ ★

Q—Many of us who play tennis on the Missile Park courts would like to play at night. Can lights be installed?

A—Installation of lights for night play is scheduled by June 30.

★ ★ ★

Q—Is there any way I can get copies of the paintings hanging in the lobby at Kearny Mesa?

A—Replicas in full color, on a 24 by 36-inch sheet, are being made available through employe benefits offices at cost, 50 cents each.

★ ★ ★

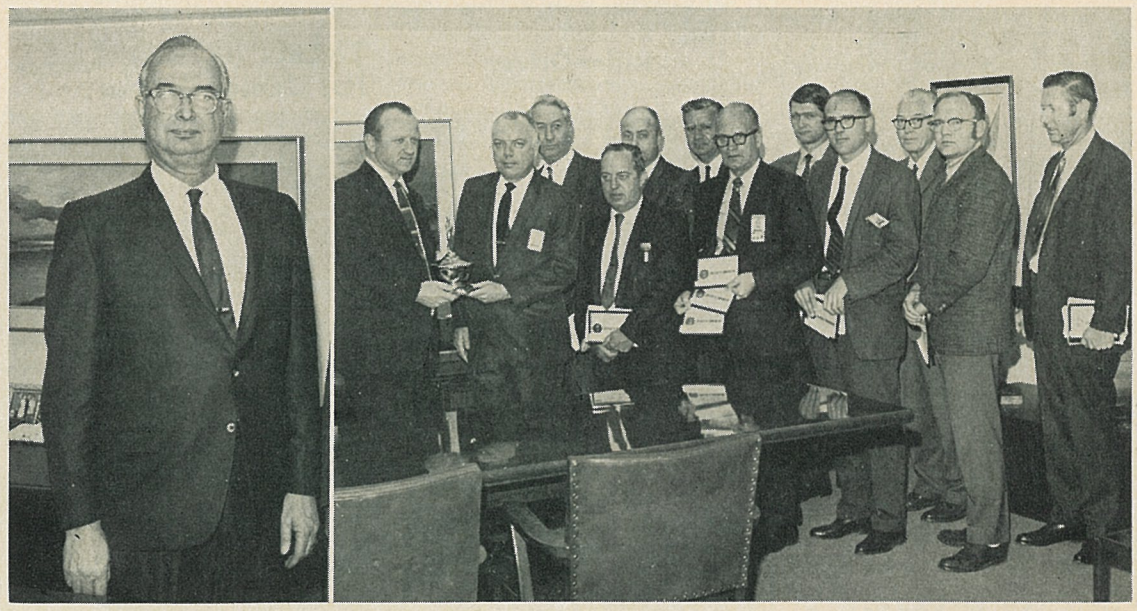
Q—Is the Savings and Stock Investment Plan distribution of 1966 funds considered as taxable in 1969 or 1970?

A—Distribution was in 1970 and therefore reportable as 1970 income.

★ ★ ★

Q—Are Company contributions to the Savings and Stock Investment Plan fully vested after four full years and

(Continued on Page 2)



VALUE WINNER 1969—S. W. Swenson, left photo, Dept. 512, assistant chief design engineer-structural design, recently accepted Convair division research and engineering department's yearly value control trophy in behalf of his department for their total savings of $3,324,700 for year. In right photo W. W. Fox, director of F-102/106 interceptor program, presents Convair division research and engineering department's fourth quarter value control trophy to George Trimlett, left, assistant chief design engineer-mechanical design. Individual certificates of commendation for value control proposals went to (from right): Richard Buss, Dept. 511; W. R. Chapman, Dept. 511; Jim Whiston, Dept. 511; Noel Taylor, Dept. 531; Bruno Bracka, Dept. 511; Robert Young, Dept. 566; Al Avgerenos, Dept. 566; Laird W. McKee, Dept. 533; John Rittweger, Dept. 431; Frank Beale, Dept. 533.

AWARDS BANQUET—Winners of 1969 Convair safety awards are shown at CRA Clubhouse banquet. From left, Dr. John McCann, Corporate director of health, safety and security; Roger Lynch, Vandenberg base manager; John Hopman, Convair chief safety engineer; George Jacob, Dept. 101-0; Lyman Josephs, Convair vice president and general manager; Gunner Gatterman, Dept. 780-1.

Three Winners Honored During Safety Banquet

Winners in the 1969 Convair safety contest received trophies at the 13th annual awards banquet, Feb. 16, in CRA Clubhouse.

The trophies, presented by Lyman Josephs, Convair vice president and general manager, were awarded to Roger Lynch, representing Western Test Range which won the off-site award; Gunner Gatterman, Dept. 780-1, Group I award; and George Jacob, Dept. 101-0, Group II award.

Group I consists of those areas that have the highest "accident exposure factor" while Group II areas have a lesser exposure rate.

John Hopman, Convair chief safety engineer, gave a presentation on the division's safety performance in 1969. There were 323 accidents compared with 311 in 1968 and 235 in 1967.

Of the 323 accidents, 199 were serious medical cases and 14 were lost-time disabling accidents. The division did not meet its safety goals.

It was Hopman's last safety dinner. He retires soon. Tributes were paid to him by Stan Sharp, manager of industrial security, who acted as emcee for the evening; Bill Van Horn, director of operations; Lynch; Josephs; and Dr. John McCann, Corporate director of health, safety and security.

Log Book Entries

Service Emblems

CONVAIR

Service emblems awarded between Feb. 16 and Feb. 28.

Thirty-year: Dept. 015, W. H. Wallrabenstein, O. C. Banke; 149, C. G. Nixon; 204, N. R. Keough; 420, W. E. Ladd; 761, J. K. Harkins; 950, F. B. Wozniak.

Twenty-five-year: Dept. 403, R. Lawson Jr.; 526, R. C. Lambert; 565, Hilda Z. Creese; 831, L. F. Button.

Twenty-year: Dept. 015, R. H. Noble; 027, T. Asaro, G. R. Comfort; 400, T. R. Devin, E. V. Poehlman; 780, Viola M. Beard.

Fifteen-year: Dept. 031, B. J. Hanzlik; 101, Mary Contreras; 250, Margie S. Brown, J. F. Galligan, R. Kozell; 403, H. M. Edwards; 519, D. Otto; 575, D. C. Anderson.

Ten-year: Dept. 001, J. N. Deubel; 046, J. A. Munoz; 101, J. M. Leacu; 130, E. C. White; 149, L. V. Davis; 401, J. E. Cahill, J. M. Kirk Jr.; 519, M. G. Keech; 526, Mozelle P. Davis; 553, J. E. Willgoss; 574, S. J. Martin; 733, E. V. Gloudeman; 810, F. E. Jennings; 820, H. M. Sturdyvin; 979, T. E. Weber.

ELECTRONICS

Service emblems awarded during the month of February.

Fifteen-year: Dept. 614, G. C. Hemphill.

Ten-year: Dept. 424, Theresa J. Gonzalez; 713, C. J. Ingram.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Feb. 13.

Dept. 001, D. Arena, $17.20; 574, R. J. Baldwin, $42; 015, J. Baptista, $15; 015, A. W. Beckman, $15; 144, L. E. Campbell Jr., $15; 059, S. F. Cass, $88.50; 524, B. G. Clute, $15; 015, R. L. Federspill, $15; 015, C. S. Hasley, $25; 400, R. Hopkins, $195.20; 150, B. L. Keim, $15; 507, R. H. Lewis, $15; 015, J. K. McDonough, $20.10; 001, O. H. Miller Jr., T. E. Oliver, $44.95 each (joint award); 759, R. E. Orozco, $15; 059, T. Smiechowski, $15; 059, C. E. Thornton, $16; 401, H. Vandersluis, $25; 780, S. W. Zeiss, $15.

Employe Suggestion awards approved for the week ending Feb. 20.

Dept. 027, A. R. Anderson, $71.40 (three awards); 401, J. C. Ascencio, D. W. Sandberg, $7.50 each (joint award); 574, R. J. Baldwin, $119.60; 250, E. C. Black, $103.60; 985, V. D. Brose, $30; 574, C. F. Carpenter, $15; 113, D. W. Chase, $15; 985, H. E. Crabtree, $30 (two awards); 027, L. Cruz, $52.80; 059, G. I. Fisher, $264; 985, C. M. Flores, $15; 780, R. C. Glover, C. M. Johnson, T. W. Myers, $5 each (joint award); 027, D. W. Keogh, $15; 027, E. A. Leach, $17.10.

Dept. 507, R. H. Lewis, $15; 833, F. J. Light, $28.60; 420, J. H. McDonald, $197.30; 015, J. K. McDonough, $15; 985, M. Moll, $15; 511, L. M. Moore, $15; 985, A. M. Moors, $15; 831, J. A. Morrell, 985, J. F. Wells, $82.15 each (joint award); 059, G. Olcott, $15; 027, E. P. Osgood, $15; 027, V. Prado, $16.70; 511, G. A. Samuelson, $15; 733, H. Staten Jr., $15; 584, K. Taylor, $15; 250, H. L. Teague, L. M. Timlick, $15 each (joint award); 250, I. Vanderheiden, $15; 027, P. L. Walker, $15; 027, D. C. Walton, $15.

Retirements

CONVAIR

FAULKNER—William C., Dept. 761-0. Seniority date Nov. 4, 1946, retired Feb. 9.

FITZHUGH—Luceail J., Dept. 761-0. Seniority date April 26, 1956, retired Jan. 5.

GILBERT — Clifton R., Dept. 144-1. Seniority date July 19, 1956, retired Jan. 19.

GORMAN — Tappin A., Dept. 531-2. Seniority date Jan. 4, 1965, retired Jan. 30.

MAYER—Jacob F., Dept. 761-0. Seniority date May 12, 1947, retired Feb. 9.

POULSEN—Cora G., Dept. 832-2. Seniority date Aug. 6, 1951, retired Feb. 13.

WILLCUTT — Ward E., Dept. 561-0. Seniority date July 21, 1958, retired Dec. 15, 1969.

Rider-Driver

CONVAIR

RIDE WANTED—From Laurel & Third to Lindbergh Field plant, 7 a.m.-3:30 p.m. shift. Call Bill Fitzroy, ext. 1413 LF.

RIDE WANTED — Or car pool from Oceanside area, 7 a.m. to 3:30 p.m. Call Lola McDougall, ext. 1975 KM or 729-7424 (home).

Personals

CONVAIR

I wish to express my thanks and deep appreciation to our many friends for the flowers, contributions, and other acts of kindness and expressions of sympathy extended to me since Larry's death.

Mrs. Lawrence Olson

* * *

Your kind expression of sympathy is gratefully acknowledged and deeply appreciated.

The Robert McLenachen family

Deaths

CONVAIR

BROWN—James P., Dept. 250-6, died Feb. 12. Survivors include a sister and brother.

COOK—Howard M., Dept. 401-1, retired Nov. 12, 1960, died Jan. 30.

CRAIGMYLE—Pearl B., retired Aug. 30, 1968, Dept. 967-0. Survived by her husband, George.

HENTZ—Walter P., Dept. 460-0, died Feb. 6. Survivors include his wife, Elsie, daughter Mrs. Kathry Butler and grandson, John Butler.

KENYON—Doris E., Dept. 420-0, died Feb. 5. Survivors include her parents, Mr. & Mrs. Wm. J. Kenyon and brother, Calvin.

McLENACHEN — Robert, Dept. 407-0, died Feb. 5. Survivors include his wife, Bertha, two sons and a daughter.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Space Shuttle RFP Received

Convair division has received a comprehensive request for proposal (RFP) for phase B definition studies for the "space shuttle" reusable launch and orbital vehicle space transportation system.

A joint proposal, due to NASA by March 30, will be submitted by Convair and North American Rockwell. Dr. Donald Dooley will lead the Convair effort as vice president—space programs (**GD/NEWS, Feb. 18**).

NASA is expected to fund two or more teams in June for the phase B studies, which are expected to run about a year. The phase B studies will lead to a phase C design and hardware competition.

Reusable "space shuttle" vehicles of the future will reduce cost of sending payloads into orbit.

Under a teaming agreement announced last month, Convair will concentrate on development of the booster with North American Rockwell handling systems integration and orbital - vehicle development.

Value Control Cuts $8 Million

(Continued from Page 1)

posal involved replacing a machined splice fitting on the DC-10 fuselage with a less costly net forged one.

A stress coining operation on the DC-10 program was eliminated as a result of a proposal credited to Jim Whitson, Dept. 511-8, resulting in a savings of $134,800.

Others receiving certificates and savings from their VCPs were: Bruno Bracka, $8,000; J. C. Randall, $157,800; Robert Young, $386,100; Laird W. McKee and T. A. Parker, $51,100; Noel Taylor, $22,500; R. L. Hayward, $139,600; S. Zullo, $49,470; Frank L. Beale, $98,300; Richard M. Buss, $35,100; F. J. Schnaubelt, $2,900; W. Garcia, $35,100; W. R. Chapman, $37,000; A. Avgerenos, $87,400; John Rittweger, $23,900; T. Berak, $85,600; C. F. Richards, $45,300; J. Bradshaw, $7,000.

First DC-10 Shipset Sent to Douglas

(Continued from Page 1)

be assembled with other DC-10 components at Long Beach for a projected July 1970 "roll-out" of the first DC-10 tri-jetliner which is scheduled for its maiden flight in September.

All Convair fuselage sections were carried to Long Beach aboard Aero Spacelines' whale-sized Super Guppy.

Convair will produce 300 fuselages under a subcontract with McDonnell Douglas Aircraft Corp. which extends through 1974.

Tickets on Sale For Junior Hockey

Tickets are on sale at CRA and employe services outlets for the National Junior Olympic hockey tournament April 3-5 at San Diego Sports Arena.

There will be 22 games, featuring 8 United States regional champions. Tickets are $5.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Continued from Page 1)

therefore cannot be subject to forfeiture under any conditions?

A—Yes. The Plan provides "when you have been a member of the Plan for four consecutive Plan years, the Company's contributions made during your first Plan year (and the earnings thereon) will 'vest' in you. . . ."

★ ★ ★

Q—Is there something that can be done to prevent stripping of cars in Convair parking lots?

A—Yes. Industrial security is currently implementing a system designed to virtually eliminate thefts in our parking lots. This system will be described in *GD/NEWS* in the near future. Added security efforts are helping to reduce thefts and employes can assist by immediately reporting to any security guard any suspicious activity they might observe. (Many inquiries have been sent to Q and A on this subject. Because of the volume, these are being answered through *GD/NEWS* rather than by individual letter.)

Mansfield Adds $1,687 To Total For ES Ideas

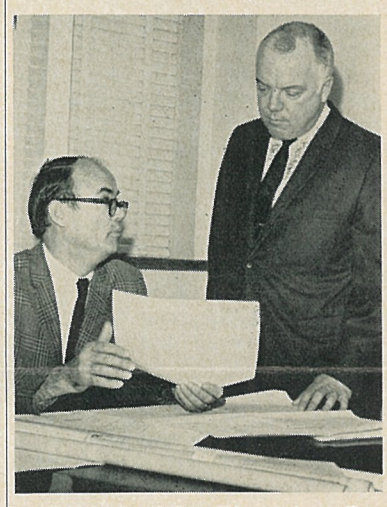
Ed Mansfield, an engineering drawing checker in Convair's Dept. 565-1, has been presented a $1,687 award for an Employe Suggestion expected to save a substantial number of engineering manhours in processing about 3,750 engineering drawing changes during the next year in the DC-10 program.

As a result of Mansfield's ES, blueprints related to a planned engineering drawing change "package" now are kept with the "package" through the entire release cycle, from the time the change comes off-board until final release.

Previously personnel from each function had to check out the needed prints, use them, then return them to the blueprint files.

As many as 10 groups can be involved as a change goes through the engineering release cycle. Included are design, stress, weights, material, tooling and planning, checking, value engineering, specifications compliance, and product support functions, and the McDonnell Douglas resident representative's office.

Mansfield previously received a $5,000 ES award (**GD/NEWS, Sept. 3, 1969**) for suggesting a change in division procedures to permit making both Class 1 and Class 2 engineering drawing changes on the same engineering order form for the DC-10 program. A month earlier he had received a $25 award.



TIME SAVER—Discussing Employe Suggestion expected to save manhours during next year are Ed Mansfield, seated, who received $1,687 for suggestion, and W. W. Fox, who presented award check.

"We appreciate all these good ideas," W. W. Fox, acting for the vice president-research and engineering, said in presenting the most recent award to Mansfield.

"We're creatures of habit," Fox commented. "We do things the way we've always done them. Often there's a better way."

Mansfield has been with Convair since 1954. His ES awards, all for suggesting changes not part of his assigned tasks, are being used toward home improvements and purchase of a camping trailer.

TWO ASSEMBLERS NOW 'WISE OWLS'

Two aircraft assemblers in Convair's Dept. 027 at AF Plant 19 recently became the division's 13th and 14th members of the national Wise Owl Club as a result of safety glasses saving their eyesight in industrial accidents.

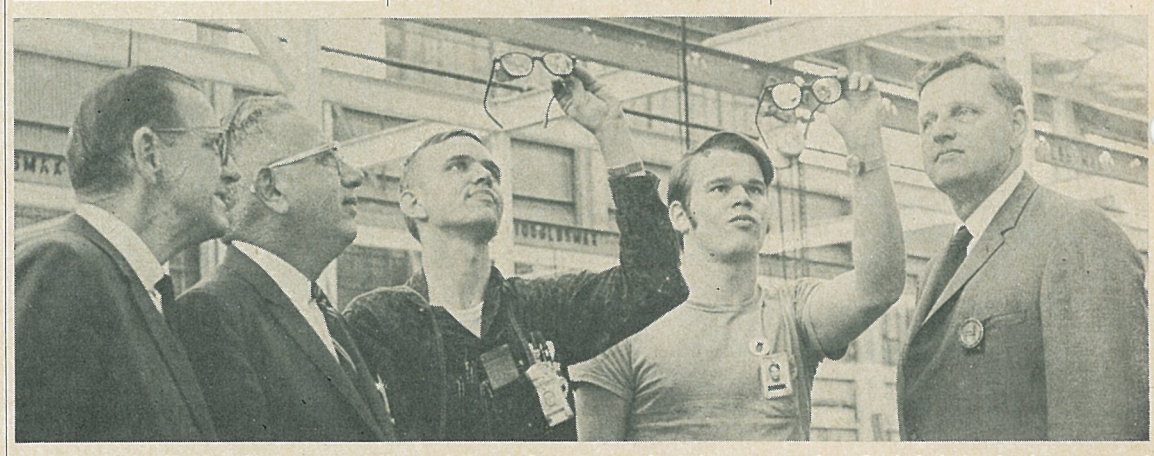
G. W. Westhydeman was saved from injury when a bit in a drill being used inside an F-111 inlet duct by R. A. Estrada, also of Dept. 027, shattered after apparently hitting a clamp.

Westhydeman, standing outside the duct, was hit on the left lens of his safety glasses and the lens was shattered.

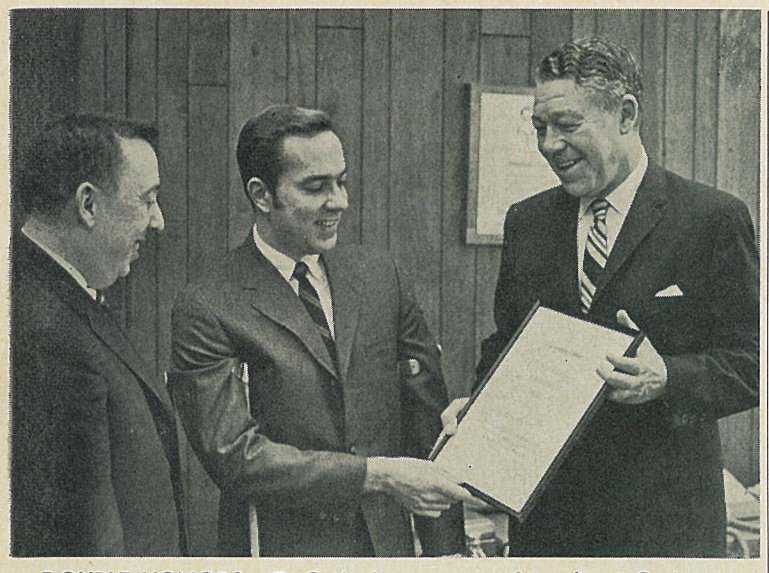
Gary K. Sherwood was using a wrench to remove a drill bit from a pressurized pneumatic-operated hand drill when he inadvertently hit the air trigger, causing the drill chuck to rotate.

The wrench hit the right lens of his safety glasses, shattering the lens and causing a minor laceration under his right eye.

The Wise Owl Club is sponsored by the National Society for the Prevention of Blindness.



SIGHT SAFETY—Checking safety glasses that proved sight savers for G. W. Westhydeman and Gary K. Sherwood are (from left) Jim Cooper, safety engineer; Harry Rote, general foreman; Westhydeman; Sherwood; and Dr. John P. McCann, Corporate director of health, safety and security.



DOUBLE HONORS—E. Orrin Lee, center, Stromberg-Carlson engineering supervisor, was winner of Corporate Design Achievement Award for 1969, picked from among nine nominees. He is shown receiving divisional award from S-C President Dause Bibby, right, and Sherman B. Weiner, S-C vice president-research and engineering.

Stromberg-Carlson Man Earns Corporate Award

E. Orrin Lee, a Stromberg-Carlson engineering supervisor, has been selected as winner of the top engineering award of General Dynamics for 1969.

Lee was selected for the Corporate Design Achievement Award after earlier being chosen as the Stromberg-Carlson winner. His work in the design of the Stromberg-Carlson CROSSREED Electronic Private Branch Exchange (EPBX) switching system was judged the most significant contribution by a General Dynamics engineer in 1969.

Roger Lewis, General Dynamics' president, announced the $1,000 Corporate honorarium, noting that the contribution was a significant one for both General Dynamics and Stromberg-Carlson. The honorarium will be presented this week in New York City.

Lee earlier had received a $500 division design achievement honorarium and thus became Stromberg-Carlson's nominee in the Corporate judging. The awards were presented at nine divisions and subsidiaries.

Lewis noted that at each operation the selection of a winner was difficult because of the high level performance by General Dynamics engineers. The capability of our people, he said, is a great strength of General Dynamics.

Lewis announced that this program will continue as a means of recognizing significant achievements in the design field.

Lee has been in charge of the CROSSREED EPBX design group since 1966. He was instrumental in formulating the design approach for the system. Lee personally introduced a unique approach to the system's common control. In addition to conceptual work, he designed major portions of the common control circuitry. To date, his design efforts have resulted in 18 patent applications.

The 36-year-old engineer is a graduate of the University of Virginia where he received a bachelors degree in electrical engineering. He joined the United States Instrument Company at Charlottesville, Va. in 1962 as a circuit engineer. Lee moved to Rochester in 1965, shortly after USI and Stromberg-Carlson were consolidated. His first Rochester assignment was as a senior engineer in the electronic switching program. He was promoted to engineering supervisor in 1969.

The CROSSREED EPBX represents a breakthrough for Stromberg-Carlson. It is the most modern private telephone switching system now in existence and is designed for modern production methods. While a complex and and highly sophisticated system, it is designed for fast, easy installation, high reliability and easy maintenance.

Production of the CROSSREED EPBX began in the fourth quarter of 1969 and three of the systems have been placed in service with independent telephone companies.

In announcing the divisional Design Achievement Award, Stromberg-Carlson President Dause L. Bibby said the CROSSREED system represents a significant new addition to the company's growing product line. He said Lee earned the award by his notable contributions to this system.

Bibby termed the selection "a tough but excellent decision" by the Design Achievement Award Committee headed by Sherman B. Weiner, S-C vice president research and engineering.

The Design Achievement Award program was begun by General Dynamics in 1969 to highlight engineering excellence during the year. The program will be continued and winners again will be selected on the basis of outstanding accomplishment during the year. The winner of the Corporate award will be selected each year from division winners.

Other division winners for 1969 were:

Canadair—John Kerr, conception and design of the CL-89 missile.

Convair—J. David Forest, application of metal matrix material to a structural component.

Fort Worth—James E. Ashton, development of computerized program for solution of rectangular anisotropic plate problems.

Pomona—Steve Domen, solution of guidance system problems on Redeye missiles.

Electric Boat—Russell Brown, major contribution to new submarine power plants.

Quincy—Murray Kerr, identifying structural problems in Lykes ships.

Electronics—J. F. Judson and E. A. Peterson, increased dynamic range for sonobuoy receivers.

DatagraphiX—James Benham, efforts leading to development of DatagraphiX tape deck.

Savings Plan Distribution Valued at $12 Million

In accordance with their election this past November, 13,222 salaried and hourly employes who participated in the General Dynamics Savings and Stock Investment Plans during 1966 recently received a total distribution valued at $12,067,383.

The distribution included $7,427,430 in employe savings, $3,713,715 in company contributions, and appreciation to Dec. 31, 1969 of $926,238. Thus, on the average, employes received $1.62 in February, 1970 for every dollar they saved in 1966. The amount of distribution for any particular employe depended, of course, upon his investment option and the resulting combination of GD common stocks, government bonds and diversified portfolio securities comprising his own account.

The distribution consisted of 50,005 shares of GD common stock valued at $1,387,639 and $10,679,744 in cash. The cash included the value of government bonds, $5,029,809; diversified portfolio securities, $5,555,631; and fractional shares of GD common stock, $94,304.

Those employes who last November elected to defer distribution of their 1966 accounts now have a non-forfeitable right to those accounts, including both their own savings and also the 1966 company contributions. These deferred accounts will remain invested in the Plan.

* * *

A random sampling of a few Plan members included these reactions:

"I'm withdrawing funds at each opportunity because I'm shopping for a new house and I'll need these funds to help with the down payment," said a Pomona division design engineer.

"I wouldn't touch that money at all," said a Pomona machinist with 18 years' service. "I'm looking forward to retirement before long and I want to build up as big a pot as I can. What I don't take now will grow bigger each year."

"I took it out because I wanted to have some money in a savings account that I could call on in emergencies," commented a Fort Worth division man.

(One member at Fort Worth had perhaps a unique reason for leaving his savings in the Plan. He signed the wrong card!)

"I didn't withdraw this year, but I'll probably have to next year because I have a son who will be entering college in the fall of 1971," another Fort Worth man reported.

A young electronics engineer at Pomona labeled himself a strong believer in the Plan and said he plans never to withdraw. "I was much impressed at my projected savings and benefits. That's the kind of retirement estate I want to create."

A Convair division electrical engineer said he did not exercise the withdrawal option because "I think it's a good investment where it is."

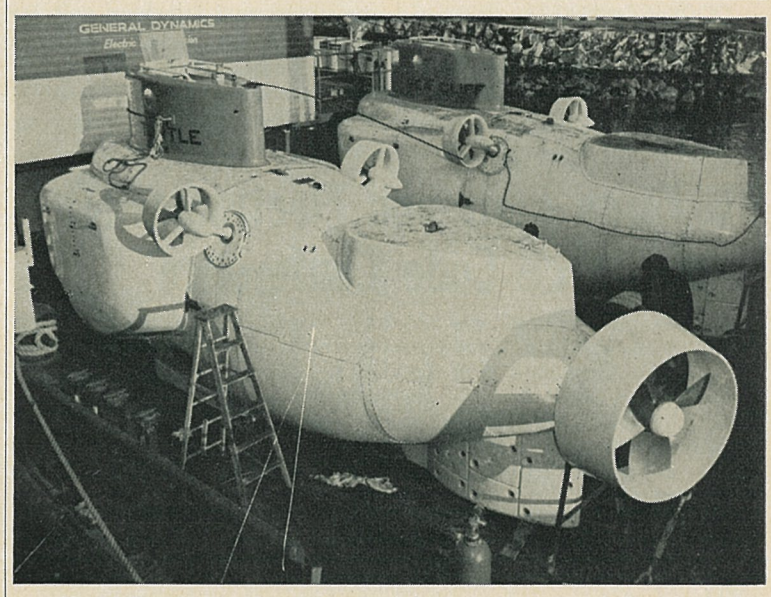
A 54-year-old leadman at Convair said "I didn't withdraw because I don't really need the money now, and it will be more important when I retire."

A Convair machine specialist, who is 42 and investing 10 per cent of his paycheck, said "When I retire in 20 years I expect to have more than $100,000 in the account, including my savings, the Company contributions and dividends."

"I've been in the Plan from the beginning," said an Electronics division secretary. "I think it's great." She withdrew her 1966 funds, however, for a vacation trip.

A Convair jig and fixture builder left his funds in the Plan but expects eventually he will withdraw some, as his children ages 8 and 13 are earmarked for college.

A Pomona secretary and a Convair department clerk chose withdrawal for the same reason. They plan a trip to Hawaii!



ALL ABOARD—Twin research submersibles Sea Cliff and Turtle sit side by side aboard surface support ship Maxine D. prior to trip to Bahama Islands.

Twin Research Submersibles Engage In Six-Week Bahamas Sea Trials

Sea Cliff and Turtle, twin research submersibles designed and built at Electric Boat division began a six-week schedule of sea trials recently off New Providence Island in the Bahamas.

The two 26-foot submersibles left Groton, Conn. aboard the 165-foot surface support ship Maxine D.

Sea Cliff and Turtle, both built under contract to the Naval Ship Systems Command, will undergo testing of propulsion, stability, navigation, electronic and communication systems. Also on the schedule are testing of the manipulator arms, submerged endurance runs, and deep dives. A Navy Acceptance Board will witness the tests.

Upon delivery, Turtle will be operated by the Atlantic Undersea Test and Evaluation Center (AUTEC) in the Bahamas. Sea Cliff is scheduled to be operated by the Office of Naval Research at Woods Hole Oceanographic Institution, Woods Hole, Mass.

Both two-man submersibles can dive deeper than a mile, have a speed of 2.5 knots, and displace 21 tons.

On Its Own

F-106 Proves Its Independence As Pilot Ejects at 14,000 Ft.

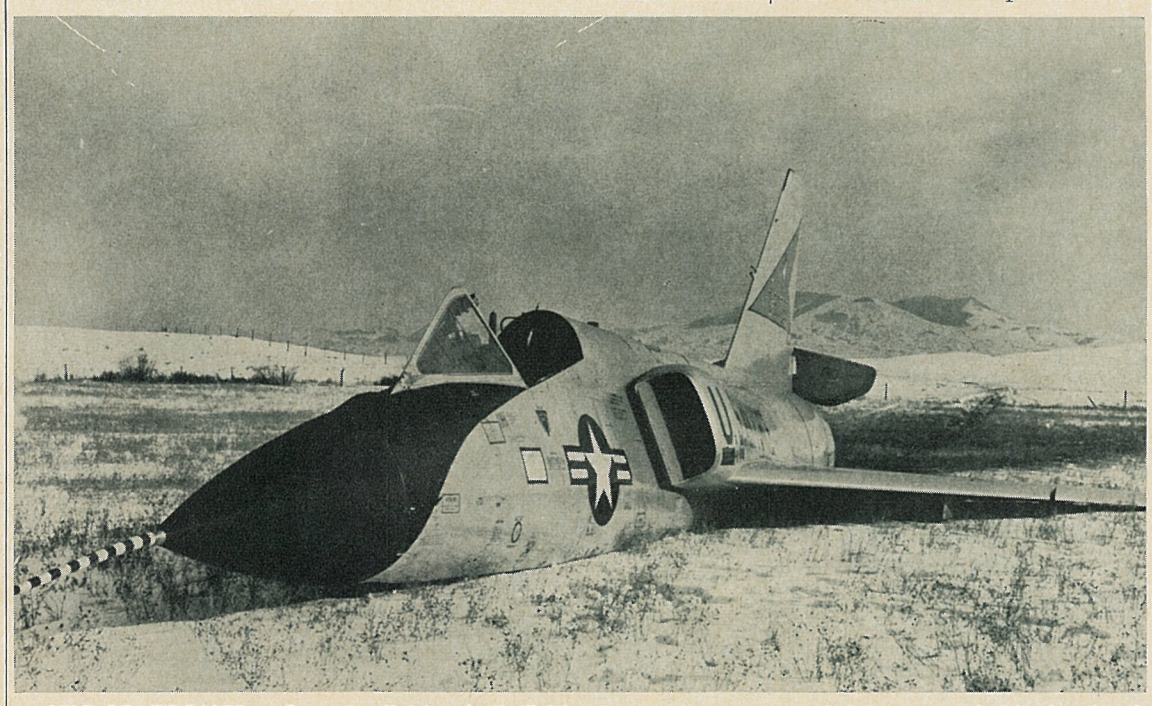
A pilotless F-106 fighter-interceptor landed itself intact in a Montana snowfield early last month after pilot and plane parted company at 14,000 feet.

The pilot parachuted safely to earth about 10 miles away. There was no immediate explanation for the ejection, pending an investigation.

Descending on its own, the Convair division-built F-106 miraculously avoided a nearby town, circled several hills and finally touched down in a field a mile south of Box Elder, Mont. The craft slid some 400 yards on its belly, striking only a barbed wire fence before coming to a halt on a slight grade. So gentle was its self-landing that the engine continued to idle for nearly two hours until it ran out of fuel.

One eyewitness, a nearby resident who watched the landing from a grain elevator, drove his truck alongside the plane and climbed to the cockpit expecting to find a pilot. The empty seat and still running plane must have constituted the shock of his life!

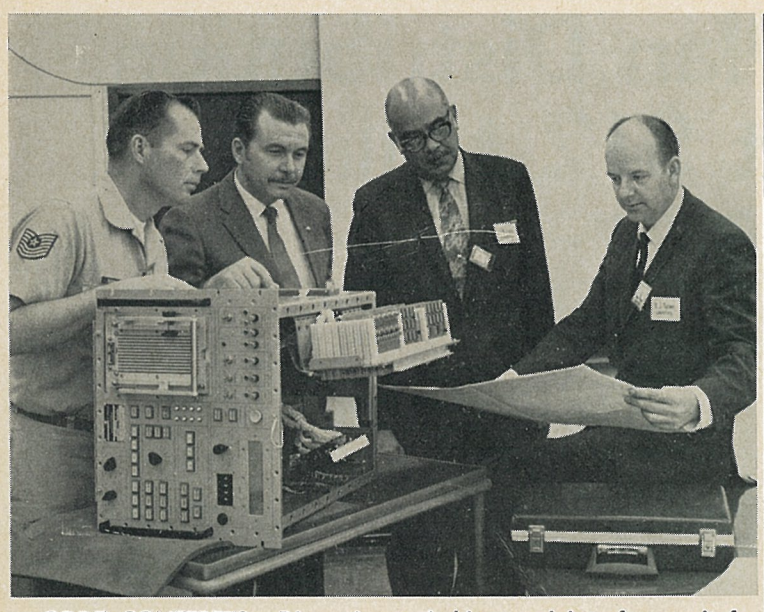
Convair technical service representative Charles Stevens is assisting the Air Force investigation.



SELF-CONTROLLED—Convair division-built F-106 interceptor rests in Montana snowfield after landing itself perfectly following pilot's ejection at 14,000 feet.

U.S. MANUFACTURERS TO SHOW PRODUCTS

An article in the Dec. 29, 1969 issue of International Commerce calls attention to the fact that 1,250 trade fairs in 73 nations over the next 24 months will provide showcases for U.S. manufacturers seeking to expand export markets.



CODE CONFEREES—Discussing switching and interface unit for F-111 radar homing and warning test station during full-range source code conference hosted by Electronics-SD are, from left, M/Sgt. D. D. Bartlett of Tactical Air Command, F. G. Kossow of Fort Worth division, J. W. Roane (chairman) of Sacramento Air Materiel Area, and B. J. Tucker of Electronics-SD.

Air Force Reps and Electronics-SD Hold Source Code Conference

Representatives from the Air Force Strategic Air Command, Tactical Air Command, and Sacramento and San Antonio Air Materiel Areas were at Electronics-SD 10 days last month to participate in a full-range source code conference for an F-111 radar homing and warning (RHAW) ground support test equipment test station (AGERD 6891).

Electronics-SD produces the test station for the Air Force under subcontract from Fort Worth division.

About 9,000 items used in the station were reviewed at the conference for spare parts selection, designation of maintenance factors, and source code assignments for the Federal Supply Code, the Inventory Management Code, and the Material Management Agrigation Code.

J. W. Roane of Sacramento Air Materiel Area was chairman. Other Air Force participants included G. L. Hamlett of San Antonio Air Materiel Area, CM/Sgt. C. H. Rogers and M/Sgt. L. K. Runion of SAC, and M/Sgt. D. D. Bartlett of TAC.

Fort Worth division was represented by F. G. Kossow and Electronics-SD by B. J. Tucker, C. J. Sandvall, L. G. Atkinson, J. F. Valade, J. R. Taber, D. F. Nichols, G. C. Hemphill, F. A. Klukas, E. C. Martin, C. D. Law, and N. L. Dahl.

G. A. Andert of Electronics-SD was conference proposal leader and Valade was conference host. R. L. Williams is Electronics-SD program manager for the RHAW unit reviewed.

Valade said the conference was the first of its kind to be hosted by Electronics-SD.

E. T. Miller Serves With Santee Group

Elwood T. "Woody'" Miller, contract administrator for the Defense Contract Administration Services Office at Convair, is second vice-chairman of the executive board of the Santee Citizens' Planning Committee, Inc.

Purpose of the group is to assist the San Diego County Planning Commission and Board of Supervisors in comprehensive long-range planning for Santee, an unincorporated community 18 miles east of San Diego.

The executive board meets bimonthly with staff personnel from the county planning, public works, parks and recreation, engineering, and other departments. Miller, a Santee resident, also is responsible for a "work program" committee within the citizens' organization.

Salvage Schedule

Next employes sales day at the materials salvage yard, Lindbergh Field plant, will be Saturday, March 7. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. No canvas or open-toed shoes and no bare feet.

WATS Service To Be Resumed

The General Dynamics nationwide long distance telephone system, Dynanet, will be discontinued effective March 16.

Convair division will revert to wide area telephone service (WATS) on that date.

To reach the long distance operator for calls outside California, callers from Kearny Mesa will dial 6, from Lindbergh Field dial 7-6, and from the Los Angeles office 6-6.

For calls inside California, exclusive of area code 213, callers from Kearny Mesa will dial 7, from Lindbergh Field dial 7-7, and from the Los Angeles office 6-7.

All long distance callers will be required to furnish operators with authorization numbers (department, log number, extension) from the department telephone chargeback log (Form 5489). Logs may be ordered through Group 21 commercial stores, material number 975052.

If a long distance call cannot be placed through the WATS system, a telephone credit card serial number will be required.

Doug Zink, supervisor of office services, emphasized that all long distance callers should check the dialing instructions which will be issued as changes to the Convair telephone directory.

For information call 3528 KM.

Five Used Vehicles Put up For Bids

The salvage yard has five used vehicles for sale.

There are two 1963 Ford semi-tractors; one 1956 Chevrolet station wagon; one 1962 Ford Econoline Van; one 1963 ¾ ton Ford pick-up.

The vehicles are located at the KM yard. Bids may be picked up at either the KM yard or the LF salvage yard.

For information call ext. 1609 LF, 2154 LF, or 1873 KM.

Bids close at 1:30 p.m. Tuesday, March 10.

Club Planning Tour Of General Motors

The Convair Management Club will tour the General Motors assembly plant at South Gate, each of five days beginning Tuesday, April 28 through Monday, May 4.

For information call Frank Berry, ext. 3676 KM.

Contract Let For Sea Lanes Test Program

Convair division has been awarded a $77,000 contract from the U. S. Coast Guard to conduct a "sea lanes test program" off San Clemente Island for the National Data Buoy Program Development Project office.

A Convair-developed and instrumented 40-foot-diameter buoy made of ferrous metal and special cement and four Coast Guard standard 9-by-38-foot aid-to-navigation (ATN) buoys will be used in the program to evaluate their effectiveness as sea lane markers.

Roy Woodle, Convair project manager for national data buoy programs, said the test program has been designed primarily to evaluate sea-keeping characteristics of the ATN buoys in open-water moorings to 4,000-foot depth, to provide operational experience with deep-water mooring and testing techniques, to obtain performance data on different mooring line materials, and to confirm the capability of mathematical models to predict buoy and mooring line response to the ocean environment.

The four ATN buoys will be moored one to three miles off San Clemente, southernmost of the Santa Barbara channel islands, each with a different mooring line material. They will be instrumented with self-contained recording tensiometers at different depths to measure mooring line tension.

The Convair composite-material buoy, also deployed in the same area, will be instrumented to measure mooring line tension, wave height, and wind speed.

Two of the four ATN buoys were deployed last October and the other two and the Convair buoy will be moored next month. The test program is to be completed by Aug. 15.

Vertical movement of the ATN buoys will be determined by optical equipment from shore and will be correlated to the mooring tension data.

Wind and water current profile measurements will be obtained in the vicinity of the buoys from boats at selected time intervals and under various sea conditions.

Tensiometers on the mooring lines will be calibrated to measure tension loads to 10,000 pounds and will be connected to graphic recorders in instrument containers on the ATN buoy superstructures.

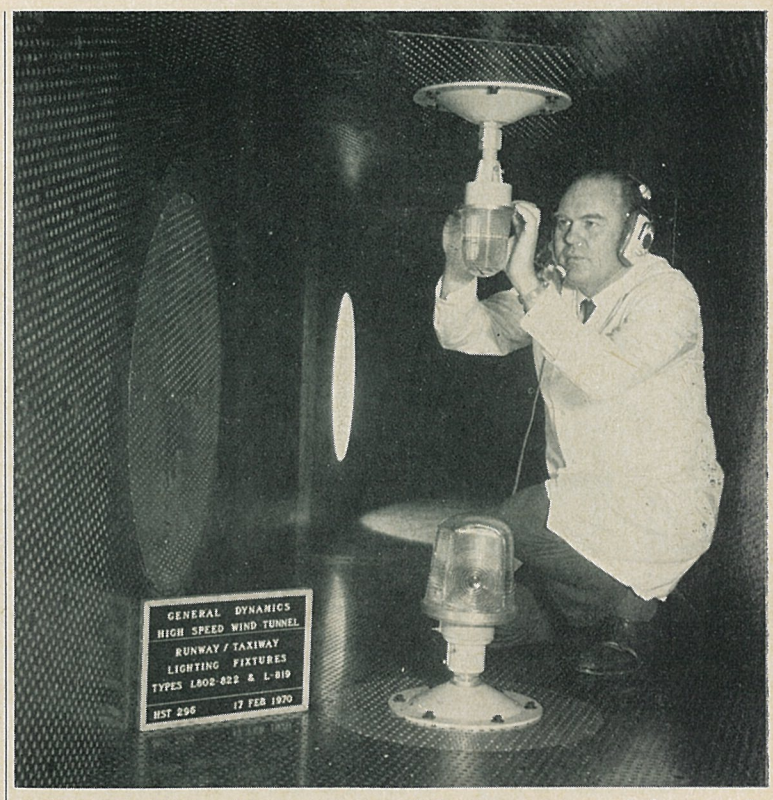
Command receivers, also installed in the buoy instrument containers, will activate the tensiometers and graphic recorders on receipt of a coded transmission from a shore-based transmitter.

Transits will be used to determine buoy positions during each test run, with existing Coast Guard navigation markers on San Clemente being used as reference marks.

Cameras with telescopic lenses will be used to record buoy vertical motion during the tests. A semi-automatic digital film recorder and data processing equipment will be used in determining relationships between time, line tension, heave and pitch motion of the buoys, phase relation between waves and the buoys, and horizontal distance from the buoys to their anchors.

Convair will set up and operate test sites to obtain needed data at San Clemente and will service instrumentation on the buoys. The Coast Guard will furnish land and sea transportation, lodging for Convair personnel on the island, and other materials and services.

Woodle will be project manager for the test program. Others and their responsibilities include Al Ender, project engineering; E. R. Gauthier, design engineering; Ron Okonski, mechanical design; Russ Bjorstrom, instrumentation; David L. Berquist, data processing; Bob Peller, data analysis; and Ken Jones, marine operations.



TUNNEL TEST—Airport runway lights are prepared for test in high speed wind tunnel at General Dynamics Harbor Drive facility in San Diego by Robert Black, test conductor. Tests were run for Santa Ana, Calif., firm to verify compliance of fixtures with FAA requirements.

Lab, Wind Tunnel Tests Run On Airport Lighting Fixtures

A series of laboratory and wind tunnel tests were run by Convair division personnel last month on two different types of airport runway lighting fixtures to be produced by Airport Lighting Co. of Santa Ana, Calif., to insure they meet FAA operational requirements.

One of the fixtures is a high-intensity runway marker light and the other, a smaller fixture, is a medium-intensity runway light or, with a red globe, serves as a taxiway marker. Both have high-temperature pyrex globes.

The two fixtures were subjected to blasts of wind at 350, 450, and 565 miles-an-hour in the General Dynamics' high speed wind tunnel to document their capability to withstand high winds.

Robert L. Black, a senior aerodynamics engineer and test conductor, said both easily surpassed the required wind speed limit, with only the larger of the two breaking from the 565-mph wind force.

Bill McPike of Dept. 578-3, manager for the test program, said other tests were run at Convair division's Kearny Mesa plant in the climatics test laboratory, with Roscoe Anderson as test conductor, and in the mechanical test laboratory, with Dennis Smith as test conductor.

The fixtures were subjected to temperatures ranging from -45 to 120 degrees F. in a temperature chamber in the climatics lab to insure they would function properly when turned on and operated at those temperatures.

Break-away couplings in the bases were tested with 250 to 500-pound loads being applied to the fixtures in the mechanical test lab to verify the couplings would break within required limits if struck by a moving aircraft or other object.

Dan Smith of San Diego, principal stockholder and vice president of Airport Lighting Co., said the two types of fixtures tested are the first products to be produced and marketed under the firm's own ALCO trademark. The 10-year-old firm previously has served as a distributor for surplus lighting equipment, primarily for small-city and independently-owned airfields.

Smith said bases for the new lights for which FAA approval is being sought will be produced for Airport Lighting Co. by a foundary firm in Hot Springs, Ark., with globes being manufactured by a glass company in Pittsburgh, Pa., and distribution being handled from ALCO's 22,000-square-foot warehouse in Santa Ana.

Con-Trib Approves Grants of $5,750

The Convair Employe's Con-Trib-Club approved grants totaling $5,750 during February.

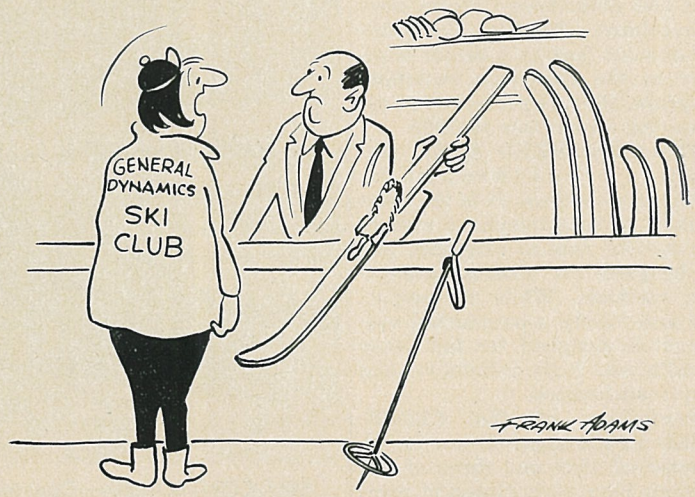
The Boy Scouts of America received $3,000; the National Foundation, March of Dimes, $1,-500; the United Crusade of Los Angeles County, $750; the Children's Hospital of Orange County, $500.

The last two requests were made on recommendation of Convair employes based in the Los Angeles area.

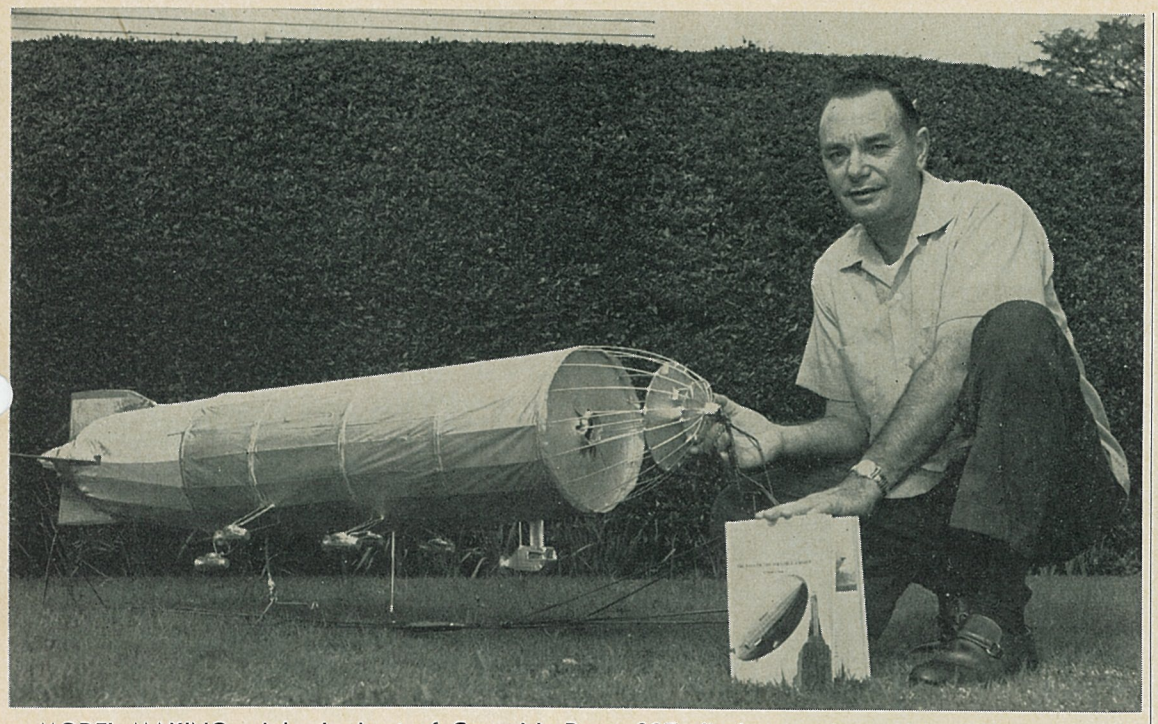
Sergeants Honored For Missile Duty

Two Air Force master sergeants have received the Department of Defense Joint Service Commendation Medal for their "outstanding service" while they were assigned to DCASO at Convair division.

The men, M/Sgt. Eugene E. Croft and M/Sgt. John Martinez, received the medal for service as missile maintenance technicians from Jan. 1966-Jan. 1970.



"Have you got a pair with brakes?"



MODEL MAKING—John Lockout of Convair's Dept. 027 displays scale model of Navy zeppelin as it nears completion. He also has built and flown hot-air balloons and a model dirigible.

Convair Man Builds Model Of Ill-Fated Navy Zeppelin

John Lockout, a Convair skin and structures mechanic in Dept. 027 at AF Plant 19, works on aircraft parts on the job—but on lighter-than-air craft during his leisure hours.

A nine-foot dirigible that he built in 1968, a helium-filled flying model powered by two 12-volt motors, has been given to the San Diego Aerospace Museum and Lockout since has built a scale model of the USS Shenandoah, the U.S. Navy's first rigid zeppelin.

The Shenandoah ("daughter of the stars") was a 680-foot-long, helium-filled craft powered by six engines and covered with a treated canvas that was built in 1924 in Lakehurst, N.J., and almost crashed into the Point Loma lighthouse at the end of a widely heralded cross-country flight from New York City to San Diego the following year.

While on a flight from Lakehurst to Scott Field, Ill., on Sept. 2, 1925, the Shenandoah was caught in a thunderstorm, its control car was ripped away, and its crippled bow section drifted to earth in Ohio. Twenty-nine of the 43 crewmen and observers were in the bow, which housed sleeping quarters and fuel bags, and survived.

Lockout's scale model is 6 ft. 2 in. long, weighs about 1½ pounds, and is covered with Japanese silk. Its bulkheads were made from cardboard and its engines were fashioned from plastic toy water guns.

"I've always been interested in lighter - than - air craft," Lockout said. "I've built several hot-air balloons and my son and I flew the nine-foot dirigible model around the neighborhood several times before a gust of wind blew it into a pole."

Lockout also enjoys painting portraits and animal scenes and is a member of the San Diego Art Institute.

Camera Club Names Quarterly Winners Of Photo Contest

CRA Camera Club will hold its monthly meeting in the Photo Arts Bldg. at Balboa Park March 15 at 7:30 p.m. A regular business meeting will be followed by a program and refreshments.

Honor winners in the club's first quarter contest are: Prints—Bob Pettyjohn, two awards; Bill Paine, one award; Art Mason, one award. Slides—Mason, two awards; Dorothy Mildice, one award; Jim Mildice, one award; Erich Wolf, one award. All entries were judged by John Oldencamp.

Club members are reminded that deadline is near for submittal of work for the Southern California Association of Camera Club-sponsored Scott Watson photo contest. For information contact Wolf, ext. 2507 LF.

Mgt. Club Will Hear Radio Show Writer

The Convair Management Club will meet at 5:30 p.m. Tuesday, March 10, at the new Town and Country Convention Center, Mission Valley.

Speaker for the evening will be Zeno Klinker, Hollywood comedy writer. Klinker was a writer for the Edgar Bergen-Charlie McCarthy radio show and is in his 24th year with Edgar Bergen. He also has the world's most complete collection of amusing historical aviation movies.

The $4 dinner will be veal cutlet. There will be a scholarship drawing and prizes.

Course Offered In Microfilming

Gus Bujkovsky, a senior engineering procedures analyst in Convair's Dept. 563-0, will teach a 12-session spring quarter University of California Extension course in "Microfilm Systems" from 7 to 10 p.m. Tuesdays beginning March 31 at Roosevelt Junior High.

The course will provide four units of college credit and will include an introduction to microfilm systems and their use in government, education, medicine, and business; microfilm storage and retrieval systems; and computer-output microfilm and its uses. Microfilm programs of major business firms will be discussed and a tour of Convair microfilm facilities will be scheduled.

Enrollment will be limited to those with two or more years experience in systems analysis, systems, industrial or methods engineering, or consent of the instructor. Cost will be $60.

Bujkovsky is president of the San Diego chapter of the National Microfilm Association and last year was one of six microfilm experts from the U. S. to give presentations at the International Micrographic Congress in Germany. He holds engineering and law degrees from educational institutions in Hungary.

Over 320 Attend Club 'Dogs' Night

More than 320 attended the Convair Management Club "Night at the Dogs," Feb. 14, according to Mike Alianelli, event chairman.

"It was the biggest crowd ever," said Alianelli. He attributed success to the fine weather, good program and hard work of his committee.

The next event at Caliente sponsored by the club will be horse races on June 14.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is March 10. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS — Meeting March 18, 7:30 p.m. Backpack in Baja, Calif., March 21-22.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BALLROOM DANCING — Instruction courses held Mondays, 7:30 p.m.

BICYCLE CLUB—Scripps Ranch 25-mile ride, March 14, meet at 9 a.m., Salk Institute. Annual dinner, Islandia Hotel, Paracel room, 7 p.m., March 14.

BONAIR FLYERS—Meeting tomorrow (March 5), 7:30 p.m.

BRIDGE — Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB—Meeting March 15, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS — Meetings Tuesdays and Thursdays, 9 a.m.-noon and 7-10 p.m.

CHESS—Meeting March 11, 7 p.m.

CHORUS — Rehearsals Mondays, 7:30 p.m.

COINEERS—Meeting March 9, 8 p.m.

COUNTRY & WESTERN MUSIC—Meet Thursdays, 7:30 p.m. CRA Missile Park picnic shelter.

DELTA DIVERS—Meeting March 11, 7:30 p.m.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB—Potluck, 6:30 p.m., meeting 7:30, March 17, Gillespie Field Clubhouse.

GARDEN CLUB — Meeting tonight (March 4), 7:30 p.m., Floral Association Bldg., Balboa Park.

GOLF — Los Penasquitos tournament, March 14-15, 7 a.m. tee-off time.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m. Monday through Thursday; 9:30 a.m. to 9 p.m., Fridays; 10 a.m. to 5 p.m., Saturdays; "Women only" weekdays, 9:30 a.m. to 11 a.m.

HI-FI MUSIC — Meeting March 10, 7:30 p.m.

ICE SKATING—GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1 (includes skates).

JUNIOR SCIENCE — Meeting March 6, 7:30 p.m.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Wednesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Club shoot March 8, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB—Meeting March 5, 7:30 p.m.

RIDING CLUB — Meeting March 11, 7:30 p.m. March 20, old fashioned shindig Jamboree at CRA Missile Park.

RIFLE CLUB—Senior shoot March 11, 7 p.m., junior shoot March 7, 9 a.m., Gillespie Field Range.

ROCKHOUNDS—Meeting March 11, 7:30 p.m.

ROLLER SKATING—GD family skate night March 16, 6:30-9:30 p.m., Skateland, Front & G Sts.

SAILING—Seamanship 13-week course, Tuesdays 7-9:30 p.m.

SCULPTURE — Workshop sessions Mondays, 7:30-10:30 p.m.

SPORTS CAR CLUB—Premiere showing of Italian film by Alfa-Romeo, March 11, 7:30 p.m.

SQUARE DANCE — Dance Thursday, 8-10 p.m. "Coming of age" dinner-dance, March 7, 8-11 p.m.

STAMP CLUB—Meeting March 12, 7 p.m.

SWIMMING—GD family swim night, March 21, 7-9 p.m., Mission Beach Plunge. Tickets at employe benefit outlets, 5 cents.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays, 10 a.m.-4 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamic Toastmasters No. 457, Thursdays, 5:30 p.m.

TOURS—European tour leaving May 3.

TRAILERS — Lazy K Trailer Park week-end March 20-22. Meeting April 7, 7:30 p.m.

TROPICAL FISH—Meeting and workshop March 16, 7:30 p.m.

When telephoning, never mind the weather. Get to the point. Telephone time costs money.

Tickets Placed on Sale For Disneyland Party

The sixth annual General Dynamics family party at Disneyland is scheduled from 8:30 p.m. to 1:30 a.m. Saturday, April 11.

Tickets for the Convair Management Club sponsored party are now on sale at $3.95 per person with children under three admitted free. The admission price covers unlimited use of all rides and attractions plus free parking.

All employes of General Dynamics and their families and guests are eligible to attend.

Special entertainment is scheduled at the Golden Horseshoe, Tomorrowland stage, and Coke terrace. There will be reduced dinner prices at the Plaza Inn, Blue Bayou and Creole Inn, and special room rates in effect for those wishing to spend the night at the Disneyland Hotel.

Tickets are on sale at all employe benefits outlets, CRA Clubhouse and at the following in-plant Convair offices:

Lindbergh Field: Arlene Young, Bldg. 4, ext. 438; Polly Brown, Bldg. 1, ext. 630; Barbara Freeman, Bldg. 5, ext. 1406.

Air Force Plant 19: Dorothy Corrao, Bldg. 4, ext. 2217.

Kearny Mesa: Betty Gossett, Bldg. 33, ext. 1861; Frances Osborne, Bldg. 5, ext. 1095; Betty Fortin, Bldg. 5, ext. 2648; Shirley Elson, Bldg. 5, ext. 3551; Maxine Emmerick, Bldg. 5, ext. 1843; Mary Davies, Bldg. 5 mezzanine, ext. 3592; Esther Adamov, Bldg. 3, ext. 1071; Mae Taylor, Bldg. 1, ext. 3778; Mary White, Bldg. 4, ext. 3187; Colleen Woodrum, Bldg. 26, ext. 1641, and Alix Markham, Bldg. 33, ext. 2805.

Tickets at other General Dynamics locations are available at the following offices:

Edwards Air Force Base (Fort Worth division), Larry Failor, ext. 73001; Convair Marine Test Facility, Gerry Veal, ext. 2101, ramp; Electronics-SD, Milly Buffat, ext. 1757 LF; L. A. Material Office (Convair division), Pat Hart, ext. 202; Stromberg DatagraphiX, Jack Swank, 442-5541, ext. 450; Vandenberg Air Force Base (WTR), Louise Deveny, 866-9835.

Bus service will be provided for those not wishing to drive. Round trip tickets will be $3.50. Buses will load at 5:30 p.m. at the main entrance to the Kearny Mesa plant.

This year Disneyland dress regulations will be in effect. Everyone must be neatly dressed.

Don Evanson, planning committee chairman, said all tickets must be purchased in advance. No tickets are sold at the gate.

CRA Horsemen Plan Western Jamboree

CRA Riding Club has scheduled an old-fashioned jamboree from 7 to 10:30 p.m. March 20 at Missile Park to kick off its 1970 horse show season.

Ruby Graves' country and western band will play for dancing and a motion picture of Mexican charro roping and horsemanship will be shown.

The club has scheduled a gymkhana and western horse show April 19, an all-western show and gymkhana June 21, an all-western show Aug. 16, and an all-gymkhana show Nov. 1. Three additional riding shows and two "fun exhibits" are tentatively scheduled and an annual hayride is planned in May from Black Mountain Ranch.

Riding lessons are available for members this month at Bonita Valley Farms, with separate sessions for beginners and intermediates.

Awards Dinner Set For Bicycle Club

CRA Bicycle Club will have its annual awards dinner at 7 p.m. Saturday, March 14, at the Paracel Room, Islandia Hotel.

Receiving awards will be Myke and Marilyn Dickey for most miles on club rides in 1969, Mark McLaughlin for most miles among junior division members, Russ Kennedy for most 25-mile rides, John Burnett for most 50-mile rides, and Dick Gilbert for his service as club president.

Earlier in the day members will take a 25-mile ride from the Salk Institute to Scripps Ranch. Leader for the 9 a.m. ride will be Dave Lukens, ext. 2881 KM.

Bowling Tourney To Begin Saturday

The 29th annual Convair bowling championship tournament will be March 7-8 and March 14-15 at Pacific Recreation, 3681 Couts Street.

Starting times for the team events, March 7-8, will be at 3 p.m. and 6 p.m. For the doubles and singles matches, March 15-16, starting times will be 2:30 p.m. and 5 p.m.

For information call Mike Brooks or Jim Hayman, ext. 581 LF.

Dynamic 8's Mark 21 Years

CRA's Dynamic 8's square dance club will celebrate its 21st anniversary with a "coming of age" party Saturday (March 7) in the CRA Clubhouse.

Clark Elliott will be caller for dancing from 8 to 11 p.m. A buffet dinner will be served at 9:30, refreshments will be available throughout the evening, and door prizes will be awarded. Donation will be $1 per person. Phone the CRA Clubhouse, ext. 1111 KM, or R. J. Collette, ext. 1051 LF, for additional information.

Dynamic 8's history dates to the fall of 1949 when the Convair Hoedowners organized. The Dynamic 8's club was formed through a consolidation of the Hoedowners and the Astro-Nauts, a club from the former Astronautics division.

Halfacre Wins In Pistol Shoot

CRA Pistol Club shooter Jim Halfacre was masters class winner in the club's Feb. 22 matches. His 290-8x score barely topped a 289-10x tally by Jim O'Brien.

Other results were: Expert—Bill Worthington, 275-9x; Leon Thomas, 274-5x; Richard Sutton, 274-3x. Center Fire — O'Brien, 274-5x; Jerry Lehrer, 273-4x; Halfacre, 251-4x; Ernie Kampmann, 238-4x. Sharpshooter—Veronica O'Brien, 241-1x; James Thomas, 210-3x.

Next matches are slated Sunday (March 8) at 9:15 a.m. at the police pistol range.

Tape Recording Talk Set for Hi-Fi Club

"What's new in tape recording" will be discussed by Norman Burwell of Dow Sound Center at a CRA Hi-Fi Club meeting at 7:30 p.m. Tuesday (March 10) in the CRA Clubhouse.

Magnetic tape decks, cassettes, and reel-to-reel recording with 2, 4, and 8-track applications will be covered. Interested employes and family members have been invited.

Volleyball Team Rosters Due In

Convair inter-departmental volleyball competition is slated for tip-off in March.

CRA-sponsored play will take place each Wednesday at Municipal Gymnasium in Balboa Park. Trophies will be awarded to top team and players.

Departments wishing to enter a team should submit a roster (10 men) to Pete Beyrer, ext. 1111 KM. Deadline for registration is March 11.

Business Look

Volume Drop In Aerospace Sales Noted

Aerospace industry sales of $28.3 billion in 1969 declined from the record $29.5 billion achieved in 1968, according to Karl G. Harr Jr., president of the Aerospace Industries Association, in the AIA's annual review and forecast.

He predicted a further sales drop to $27.7 billion in 1970, resulting primarily from lower sales of military aircraft.

Industry employment declined from 1,430,000 to 1,311,000 between December, 1968 and December, 1969, but the industry remains the nation's largest manufacturing employer.

In 1969 production workers made up 50 per cent of total employment, scientists and engineers accounted for about 16 per cent, technicians 6 per cent, with the remainder in white collar categories.

"Profits in the aerospace industry are expected to decline from 3.2 per cent in 1968 to 2.8 per cent in 1969. The decline is the result of rising financing, labor and material costs which have in turn adversely affected the levels of net income. Declining sales levels have also been a factor," Harr said.

Approximately 3 per cent of total sales are invested annually by aerospace firms for plant expansion, replacement and modernization of plant and equipment. These expenditures are expected to level off at $820 million in 1970.

Average weekly hours in the aerospace industry declined slightly from 41.8 to 41.7 between 1968 and 1969. Overtime dropped substantially.

Between 1968 and 1969 an average production worker's earnings in the industry rose from $153.53 to $161.18 while the industry payroll rose from $13.7 billion to $14 billion.

* * *

The defense budget proposed by President Nixon will end a decade-long surge in military spending, and defense industries will feel the blow.

However, shipbuilders will be less affected. The President proposed to continue buying new ships and modernizing older ones at the current year's $2.6 billion level.—BUSINESS WEEK

Air Afrique Orders DC-10 Tri-jetliners

Air Afrique has placed orders for two McDonnell Douglas Series 30 intercontinental DC-10s and an option for a third—bringing total number of orders and options for the wide-bodied tri-jetliners with Convair division-built fuselages to 204.

Operated by a consortium of 12 African states, Air Afrique serves a route system of more than 60,000 miles linking west and central Africa with Europe and the U. S.

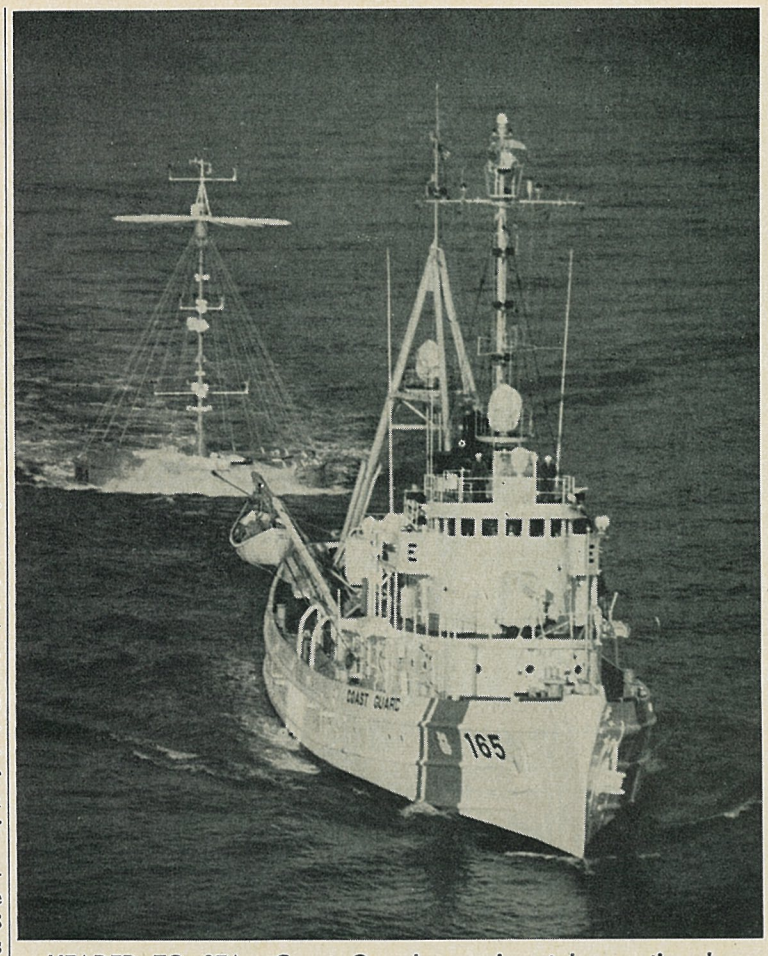
Cheikh Fal, chairman of the board, said Air Afrique's investment in aircraft, spare parts, and necessary support equipment will be about $50 million.

Paschal Speaker On Health Center

Frank Paschal Jr., administrator of the new General Dynamics Bio-environmental Health Center at Fort Worth spoke on the center's capabilities at a recent meeting of the Florida Industrial Safety Conference in Jacksonville.

Also present at the meeting was Dr. John McCann, Corporate director of health, safety and security.

At the meeting, Convair division employes received a safety award from the conference for their safety record at Cape Kennedy. Leslie King accepted for the group.



HEADED TO SEA—Coast Guard experimental reporting buoy, developed by Convair division, is towed to its station in Atlantic by cutter Cherokee. Meteorological data collected by buoy is telemetered to Convair mobile data station more than 3,000 miles away in California.

XERB-1 Reporting Daily With Data on Weather

Comprehensive meteorological and oceanographic data to improve Weather Bureau forecasting for the east coast is being received four times daily by Convair division's mobile data center in La Jolla, Calif., from the U. S. Coast Guard's first experimental environmental reporting buoy (XERB-1) moored 125 miles east of Portsmouth, Va.

XERB-1, originally developed by Convair for the Office of Naval Research as ocean data station Bravo and now on loan to the Coast Guard, was moored early last month on the edge of the main Gulf Stream where ocean depth is 10,000 feet. It was towed from Portsmouth by the Coast Guard cutter Cherokee.

The experimental buoy is 40 feet in diameter, has a 45-foot mast, and weighs 100 tons with its ballast. It is held "on station" by a three-inch, four-mile-long nylon line attached to a three-ton anchor weighted by 18,000 pounds of chain.

Its mooring line allows the buoy to swing in a circle about six miles in diameter. A flashing xenon light, similar to a camera strobe light, marks its position for passing ships.

XERB-1 gathers and stores data in a computer each hour on air and water temperature, barometric pressure, winds, dew point, solar radiation, precipitation, and surface water currents.

The Convair mobile data center interrogates the buoy computer by high-frequency radio at 4 a.m., 10 a.m., 4 p.m., and 10 p.m. (San Diego time) daily and the data is fed to the U. S. Weather Bureau teletype network for use in forecasting.

Jack Thayer and Myron Botticelli are on duty at the data center from 8 a.m. to 5 p.m. and Dick Nichols and Jack Hemming from 9 p.m. to 5 a.m.

Roy Woodle, Convair project manager for national data buoy programs, said telemetry data received has been excellent and that technical and engineering data being obtained on the buoy's operation will assist the National Data Buoy Development Project which the Coast Guard is directing for the federal government.

Coast Guard Cdr. Pete Morrill, chief of the requirements branch of the National Data Buoy Development Project, was at Convair Feb. 12 for discussions on the XERB-1 operations and visited the mobile data center to observe data retrieval from the buoy.

The Coast Guard also has stationed the cutter Gresham in the Atlantic 200 miles northeast of the XERB-1 to assist in the weather data gathering experiment.

Woodle said the XERB-1 will remain on station until July, when it will be towed in for overhaul and its radio transmitter altered for use of internationally-assigned radio-frequency bands for transmission of oceanographic data. Plans call for the buoy to be restationed in August for a year's service.

Coast Guard officials have asked Convair to submit a proposal for equipping the Coast Guard station in Miami, Fla., for data collection from the buoy.

Woodle, Ken Jones, Tom Nilson and Warren Hoover of Convair were in Virginia for deployment of the buoy and a related Coast Guard press conference.

The Weather Bureau has discovered that severe weather conditions forming in the area where the XERB-1 and Gresham now are located can migrate north along the Atlantic coast undetected by shore-based facilities.

Data from the XERB-1 and the Gresham is expected to enable the bureau to forewarn northeastern states of impending storms and heavy snowfall.

General Dynamics is an Equal Opportunity employer.

For First Time, Deaf Can 'Phone' Privately

Some special satisfaction came to everyone who took part in the installation of the Stromberg-Carlson VISTAPHONE system at the National Technical Institute for the Deaf (NTID).

"I know how I felt when I saw how much this equipment means to the people using it," says Barrie Brightman, senior staff scientist. "And I heard comments from the fellows who worked on the installation. They felt good about it too."

Brightman has been in charge of the installation and has maintained contact with NTID staff members since the equipment was put in operation in January.

What does the VISTAPHONE system mean to some of its deaf users? For Vic Galloway, director of diploma programs at NTID, it means a great deal. "I've gained some new self-respect," he says, "because I am no longer dependent on a third party when I want to use the telephone." He went on to explain that he can now enjoy a private telephone conversation, something that was simply not possible in the past.

Dr. D. Robert Frisina, director of NTID, can hear but he has been able to witness the satisfaction of his staff members when they call his office. "I guess the best way to explain the importance of this system is to compare it to the invention of the telephone for hearing persons," he says.

The VISTAPHONE system was developed at Stromberg-Carlson two years ago. Among those involved in development work were: Art Howell, Koho Ozone, Don Rimlinger, Frank Leicht, Carter Perkins, Harvey Prace and members of the engineering fabrication group headed by Andy Zolensky.

The equipment was first installed in Rochester office where 10 stations were linked through the switching system. It has been exhibited at the Sattelite School at Sibleys in Rochester and the Rochester Boy Scout Powerama. The system also did some traveling last year and was seen by visitors to trade fairs in the Caribbean and Yugoslavia.

Now at NTID the system is seeing perhaps its best use to date. The name VISTAPHONE has already been converted to sign language—a quick "VP."

INTELSAT Members View Atlas-Centaur

Seven members of the International Telecommunications Satellite Consortium (INTELSAT) visited Convair division recently for briefings and a tour of the Atlas and Centaur manufacturing areas.

INTELSAT is a consortium of more than 70 countries which jointly own the space segment of a global commercial communications satellite system.

Atlas-Centaur has been selected by INTELSAT to launch the INTELSAT IV communications satellites. The selection by INTELSAT is the first commercial assignment for Atlas-Centaur.

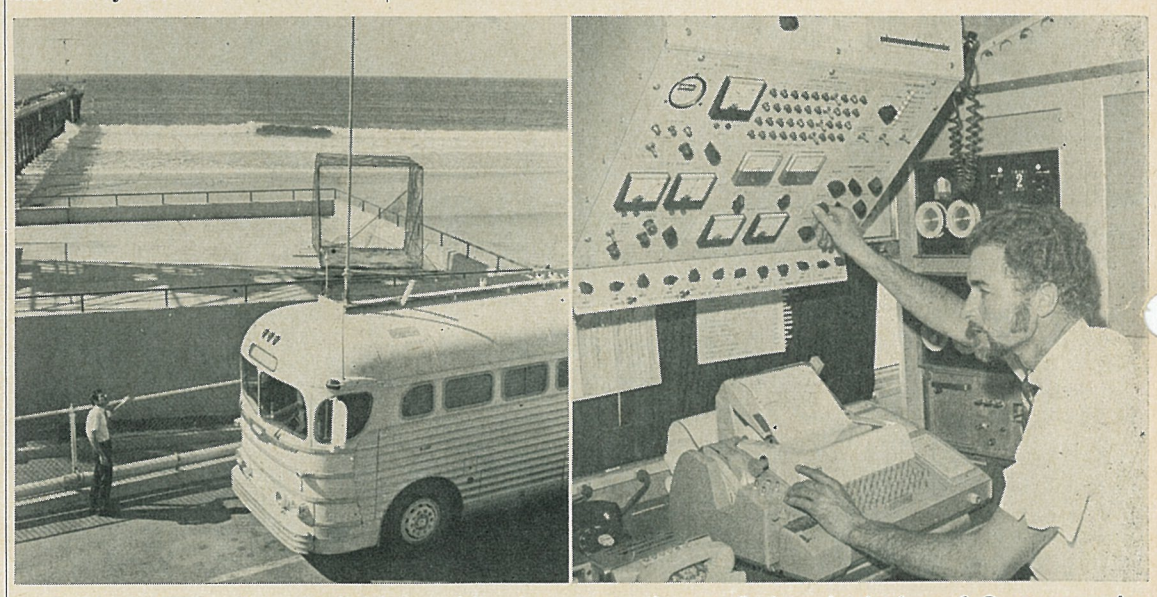
The INTELSAT IV satellites are the next generation of communication satellites. Each will be designed to carry more than 5,000 two-way voice grade circuits or a combination of different communications transmissions, for example TV and voice.

Supplier Exhibits Scheduled March 16

A Value Engineering Seminar Suppliers Day has been scheduled March 16 at Convair division's Lindbergh Field plant cafeteria. Exhibits will be open to division personnel from 11 a.m. to 4 p.m.

Larry Richey, coordinator, said 20 supplier firms will exhibit new types of welding, castings, forgings, fasteners, other mechanical devices, and electronic switching circuitry.

ENTHUSIASTIC—John Kubis, chairman of mathematics department at National Technical Institute for Deaf (NTID), exhibits kind of enthusiasm that has been typical since Stromberg-Carlson VISTAPHONE picture telephone system was installed in January. This is first known installation of telephone system for deaf. It makes possible, for first time, visual communications by sign language over telephone lines.



DATA CENTER—Convair division mobile data center bus at Scripps Institution of Oceanography, La Jolla, receives and processes data from Coast Guard experimental environmental reporting buoy (XERB-1) off U.S. east coast. Two antennas on pier receive incoming radio signal. Processed data is relayed to U.S. Weather Bureau network by Dataphone. Photos show Myron Botticelli outside mobile data center (left) and Jack Thayer operating equipment inside.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 23, No. 6 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, March 18, 1970

SHUTTLE TEAM—Convair's space shuttle program team meets with Dr. Donald Dooley, newly appointed program manager. Clockwise from lower left are Don Fagan, Dick Keehn, Dr. Dooley, Frank Dore, George Putness, Harry Wurtz, Russ Babcock, Fred Lee, Henry Nulton and Davy Jones.

Space Shuttle Team Working on Proposal

Dr. Donald Dooley, vice president-space programs, has been appointed program manager of the space shuttle program, reporting directly to Lyman Josephs, Convair vice president and general manager.

Josephs said that Dr. Dooley will "devote his full time to directing this highly important NASA program."

Dr. Dooley and his team have already been working on the response to the NASA Request for Proposal (RFP) for phase B definition studies for the space shuttle.

Reporting directly to Dr. Dooley as part of the space shuttle team are:

Frank Dore, assistant program manager responsible for North American Rockwell interface; Dick Keehn, assistant program manager responsible for engineering.

Davy Jones, NASA requirements; Harry Wurtz, contracts; Russ Babcock, procurement and subcontracts; Don Fagan, manufacturing; Fred Lee, quality and reliability assurance; Hank Nulton, safety; George Putness, business operations.

In addition to the men stationed at Kearny Mesa, Bob Roberts of the Houston Field Office and William Bond and Herb Smith of the Huntsville Field Office are key members of the space shuttle team.

During the Phase B study effort, for which Convair and North American Rockwell are teamed, NASA plans for the Manned Spacecraft Center in Houston to provide technical direction for the orbiter element and for the Marshall Space Flight Center in Huntsville providing technical direction of the booster element.

Both MSC and MSFC will administer one or more of the total systems studies during phase B.

A space shuttle program office, headed by Robert F. Thompson, has been established at NASA Manned Spacecraft Center, Houston, Texas.

★ ★ ★

AMERICAN AIRLINES JOINS SHUTTLE TEAM

American Airlines has joined the Convair - North American Rockwell space shuttle team.

North American, as team leader, announced the selection of American Airlines Maintenance and Engineering Center, Tulsa, Okla., to study the application of commercial jet aircraft maintenance techniques to the shuttles, which are expected to fly every two weeks with minimum maintenance.

The space shuttle is a two stage, orbiter and booster, fully reusable vehicle for earth-to-earth orbit operations.

Convair, under current teaming arrangements with North American, is responsible for the booster while North American is

(Continued on Page 2)

Radar Station Passes First Article Test

The Convair-built radar component test station, Aerospace Ground Equipment (AGE) item 6892, successfully passed the government's First Article Configuration Inspection.

Program manager W. J. DeLaFont said the test station, part of the F-111 ground support equipment program, was completely designed and fabricated at Convair division. The successful inspection, DeLaFont said, "demonstrates that we have met the technical and manufacturing requirements for production."

The inspection team was composed of personnel from Fort

(Continued on Page 2)

Thrust Uprated For SLV-3A, 3C Space Vehicles

Engines are being uprated for Convair division-built Atlas SLV-3A and SLV-3C space launch vehicles.

One SLV-3C and two SLV-3As, now under contract, will have their booster engines uprated to 350,000 pounds thrust and their sustainer engines uprated to 60,000 pounds thrust.

Five SLV-3Cs, now under contract, will have their booster engines uprated to 342,000 pounds thrust and their sustainer engines uprated to 60,000 pounds thrust.

Two future Atlas SLVs will have the 342,000-pound thrust booster engines and the remaining future production vehicles will incorporate the 350,000-pound uprated engines.

The engines on the SLV-3A/C are now rated at 336,000 pounds thrust and 58,000 pounds thrust for the booster and sustainer engines respectively.

The uprating does not involve new engines, according to Stan Chamberlain of the Atlas program office. He said the increase in thrust was produced by increasing the regulator pressure on the existing engines.

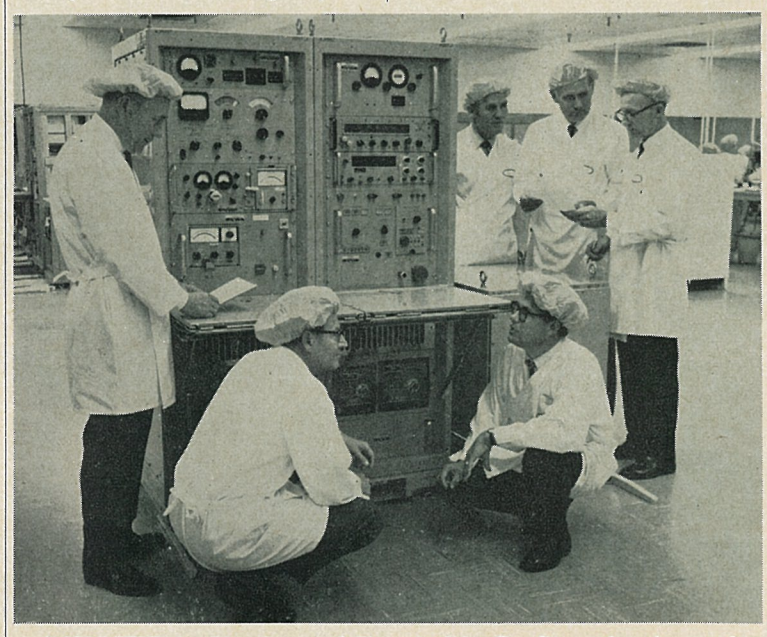
The changes were ordered by the Air Force Space and Missile System Organization (SAMSO), which contracts with Convair for Atlas boosters, because of projected increases in payload weights for planned missions **(GD/NEWS Oct. 15, 1969).**

Uprated engines will allow a payload increase of from 60 to 220 pounds, depending on the configuration (SLV-3C or 3A) and the mission (earth orbit, deep space, ballistics tests).

The uprating will result in some changes to the Atlas booster, most of which have already been accomplished, Chamberlain said.

Changes are to "beef up" the thrust structure, that part of the booster that is jettisoned with the booster engines; uprate the thrust structure heat shield **(GD/NEWS Feb. 18)**; and incorporate some mission-peculiar changes.

The uprated 350,000-pound thrust engines will also be used on the Atlas SLV-3X, a proposed launch vehicle which would use an H-1 sustainer engine with 205,000 pounds thrust and a larger tank.



INSPECTION—Members of First Article Configuration Inspection (FACI) team go over AGE (Aerospace Ground Equipment) Item 6892 during recent inspection. From left (standing) are L. C. Larson, Convair DCASO; K. R. Bushore, DCASO; Wally Jeancon, Dept. 565-0; W. W. McComb, Fort Worth division. In foreground are P. E. Petiford, Dept. 143-3, and J. F. Harrison, DCASO.

SURVEILLANCE—Capt. Gil Schryver, left, and guard Frank Fogg check Lindbergh Field plant parking lots with closed circuit TV system. Similar units are at AF Plant 19 and the Kearny Mesa plant.

Parking Lots Placed Under TV Surveillance

Closed - circuit television systems for remote round-the-clock observation of Convair division employe parking lots are expected to virtually eliminate theft of parts from autos.

S. R. Sharp, manager of industrial security, said these systems are designed for operation at the Lindbergh Field plant, Air Force Plant 19, and Kearny Mesa plant.

"We will have an immediate response from the industrial security guard force when any individual is observed attempting to remove parts or steal a vehicle or articles from it," Sharp said. "San Diego Police Chief O. J. Roed has advised us that his police patrol units will respond simultaneously and arrest all suspects. With the coordinated efforts of both the company and San Diego police the fast and effective apprehension of thieves is ensured."

Cameras at all plants have pan, tilt, and zoom capabilities for overall scanning or close-up observation of pedestrian and vehicle movement in the parking lots.

Sharp emphasized that employes, too, have an obligation and can play an important role in helping stop thefts from the parking lots by notifying any security guard immediately when they observe any activity that looks suspicious. Guard dispatch headquarters can be reached by phone at ext. 1151 KM, 1151 LF, or 1217 LF (AF Plant 19, or guards at plant gates may be contacted personally.

Division - owned closed - circuit TV cameras and control units are being used in these surveillance systems. Design and installation of the systems are handled by Frank Finch and Bill McClure of motion pictures and television Dept. 516, and Bob Miranda of plant engineering Dept. 250.

Sharp said batteries, hub caps, wheels, radios, cassette tape players, and a variety of other accessories and personal property items have been stolen from cars in the parking lots during past months.

"With the 'zoom' capabilities of the TV cameras, guards monitoring the lots can by simply pushing a toggle switch get a good close-up look at anything that looks suspect."

The security manager also pointed out that articles of value should not be left in view inside a parked vehicle, even though the doors are locked. "A thief can pry open or break a window and remove an article quickly," he said. "Articles of value that must be left in a vehicle will be safer locked inside the trunk where they are out of sight."

Division employes found stealing any article on company property are subject to immediate dismissal and prosecution.

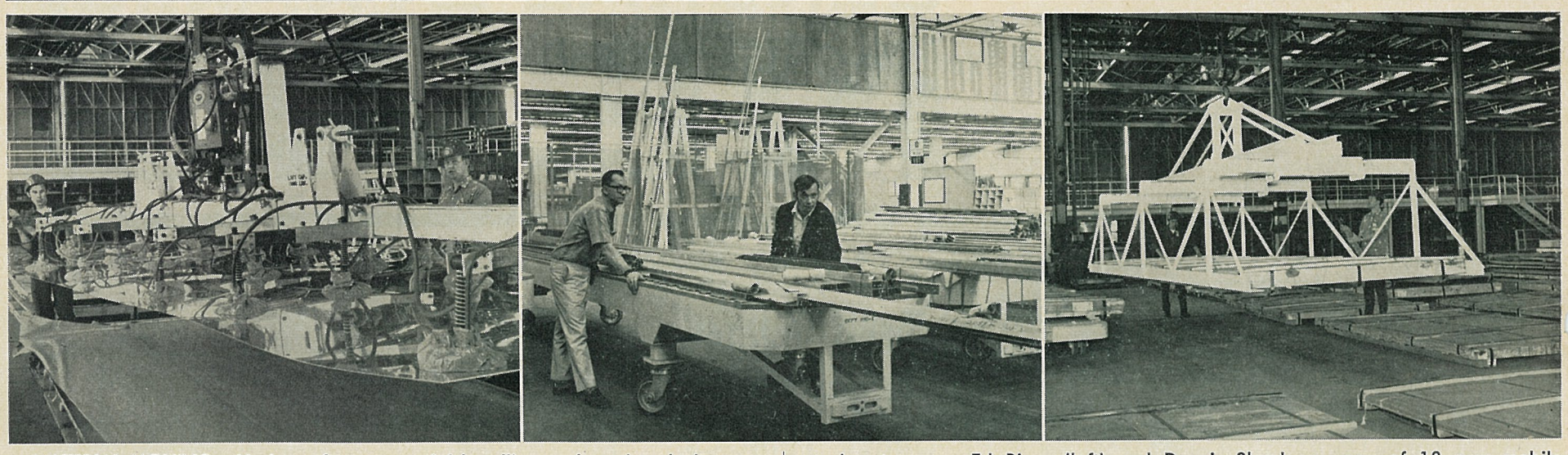
Sharp said Convair's decision to install the remote TV surveillance system was based on the excellent results obtained from use of similar systems by several other companies.

GD/News to Drop Issue In Cost Cutting Effort

As part of strenuous efforts throughout General Dynamics to reduce operating costs, GD/NEWS will eliminate the issue that would normally have appeared April 1.

Bi-weekly publishing will resume April 15. However, two other issues will be eliminated later in the year, so spaced as to minimize the loss of news coverage.

All divisions and subsidiaries, as well as Corporate Headquarters, are engaged in widespread cost reduction efforts aimed at all phases of administration and operations, with all expenditures closely scrutinized to reduce them to the essentials.



MATERIAL MOVING—Variety of new material handling and moving devices are being used in Convair material stores area in Bldg. 4 at Lindbergh Field plant. Vac-U-Lift unit with 24 vacuum "feet" is used in left photo by stock clerks David Rath (left) and Ira Higley to move aluminum sheet for DC-10. In center photo, stock setup men Ed Bison (left) and Dennis Shank use one of 18 new mobile tables to move stock. New "clam shell" package handler and overhead crane are used by Rath and Higley in right photo to move 5,500-pound package of sheet stock for DC-10 skins to temporary storage location.

Log Book Entries

Service Emblems

CONVAIR

Service emblems presented between March 1 and March 15.

Thirty-year: Dept. 019, V. C. Breit; 031, C. R. Yokley; 057, T. G. Jones; 059, T. F. Allen; 204, C. F. Blair; 400, D. H. Sandin; A. M. Van Horne; 733, J. F. Ridley; 761, A. M. Easton; 831, W. M. Flenniken; 833, J. Walsh.

Twenty-five year: Dept. 027, E. E. Yturralde; 046, J. L. Rinner Jr.; 588, Erva K. Hamilton.

Twenty-year: Dept. 027, J. Manzano; 420, C. R. Martin; 553, K. Koba; 574, C. L. Hagen; 780, R. M. Laird.

Fifteen-year: Dept. 027, J. D. Collins; 046, Rebecca M. Castro; 059, C. G. Stevenson; 149, A. Lopez; G. L. Drapper, 250, E. C. Schutz; 401, R. F. Means, D. W. Sandberg, R. Stapp, N. L. Taylor; 545, G. C. Carlson; 553, B. L. McDermott; 574, C. F. Carpenter; 780, W. Pitts; 954, J. A. Lessing.

Ten-year: Dept. 001, R. G. Frye; 015, T. N. Groot; 046, Delfina S. Alisea; 101, Marjorie L. Bare; 145, R. G. Hazlewood; 193, Josephine A. Vojtech; 195, S. L. Lindstrom, Mary Jane Tyler; 202, Mary Jane Carrico; 401, B. H. Lindgren; 460, Ruth Mary Bennett; 506, K. Samples; 517, T. Thomas; 524, Hortensia C. Cano; 595, Madge O. Sullivan; 731, J. Czarnecki; 780, C. M. Ortiz; 810, J. J. Chesna; 832, Nancy Berry; 835, Mildred M. Tolner; 840, J. L. Page.

ELECTRONICS

Service emblems issued during the month of March.

Thirty-year: Dept. 423, W. L. Tate.

Fifteen-year: Dept. 566, Blanch M. Nadeau; 614, H. C. McCray.

Ten-year: Dept. 388, D. A. Plutchak; 582, F. E. Berger Jr.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Feb. 27.

Dept. 027, H. W. Arnold, $57.20; 015, A. W. Beckman, $20; 149, C. S. Campanella, $25; 015, A. W. Chavez, $15; 144, J. F. Choitz, $45.30; 780, C. A. Davisson, $15; 027, G. N. Evans, $50.30 (two awards); 836, L. W. Follett, $26.70; 059, J. C. Fuller, $171.50; 860, V. M. Garrison, $230.50; 524, C. Gilliland, $15; 027, R. J. Guidry, $15; 780, M. F. Keehan Jr., $15.

Dept. 451, J. C. Krugle, J. J. Quarles, $40 each (joint award); 149, T. W. Luers, $15; 454, R. J. Moe, $78.80; 400, C. L. Mortera, $52.80; 149, C. E. Myers, $74.90; 027, E. P. Osgood, $15; 027, J. H. Parsons, $18.40; 027, L. J. Rickel, $15; 401, L. O. Smith Sr., $15; 985, P. H. Stephens, $15; 015, N. L. Valentino, $15; 526, F. G. Williams, $249.30; 015, W. L. Woodward, $102.10.

Employe Suggestion awards approved for the week ending March 6.

Dept. 027, R. Archuleta, $17; 780, J. H. Beals, $15; 027, R. G. Bethel, A. M. Vejar, $21.50 each (joint award); 149, C. E. Clark, $15; 979, C. L. Crockett, $71.20; 059, D. M. Cvorak, $32.80; 780, D. R. Favors, E. Palmer, $7.50 each (joint award); 142, R. L. Forbes, $110.80; 401, W. J. Gibson, $243.50; 524, C. Gilliland, $15; 059, R. G. Graves, $36.20; 780, A. P. Greenfield, $15; 046, R. M. Gregoire, $20; 519, C. Greve Jr., $15; 027, R. L. Harrod, $17.

Dept. 572, M. S. Hersh, $25; 059, E. L. Ives, $129.90; 027, J. L. Kelleaney, $15; 149, W. W. Lacy, $81.60; 027, E. E. Landry, F. H. Stine, $19.40 each (joint award); 027, S. Lepule Jr., $25.80; 507, J. E. Matthews, $15; 027, D. R. Noon, $49.40; 143, P. H. Reaves, $111.70; 059, A. K. Stevens, $15; 985, J. R. Stevens, $37.20; 569, S. T. Wood, $117.60; 027, W. L. Worthington, $51.10; 566, R. Young, $45 (three awards).

Papers Presented

CONVAIR

CHRISTIAN—J. L., Dept. 572. "Application of aluminum-boron to space structures." American Society for Metals, St. Paul, Minn., Jan. 20-22.

FOREST—J. D., Dept. 512. "The potential of composite design." William Hunt Eisenman Lectures (ASM), St. Paul, Minn., Jan. 19-22.

HOWE—R. E., R. VERTIGAN, Dept. 597. "Simulation of transport aircraft in a combat theater." Annual Simulation Symposium, Tampa, Florida, Jan. 14-16.

Papers presented at the Metal Matrix Conference, Colorado Springs, Colo., Jan. 12-15.

ADSIT—N. R., W. E. WITZELL, Dept. 572. "Fracture Behavior of Aluminum-boron composites."

CHRISTIAN—J. L., Dept. 572. "Application of aluminum-boron to space structures.'

Papers presented at the Aerospace Science Meeting, New York, N.Y., Jan. 18-21.

HAZELRIGG—G. A., Dept. 583. "Analytic mission analysis for electrically-propelled spacecraft."

MAGNUS—R., H. YOSHIHARA, Dept. 570. "Inviscid transonic flow over airfoils."

REDA—Dr. Daniel C., Dept. 584. "Supersonic turbulent flow reattachment downstream of a two-dimensional backstep."

TAYLOR — G. E., Dept. 512. "The crossed H interferometer—A large space structure for orbital astronomy."

Retirements

CONVAIR

DUST—Dorothy S., Dept. 170-9. Seniority date Aug. 2, 1950, retired Feb. 27.

ELLIS — Jeannette L., Dept. 831-0. Seniority date Oct. 24, 1955, retired Feb. 27.

JOHNSON—Ruth, W., Dept. 524. Seniority date Jan. 22, 1952, retired Feb. 27.

LEE—James C., Dept. 400-1. Seniority date Aug. 2, 1966, retired Feb. 27.

McCOY—Lewis F., Dept. 149-7. Seniority date Jan. 30, 1952, retired Feb. 27.

MEYERS — Henry W., Dept. 401-6. Seniority date April 16, 1927, retired Feb. 27.

MITCHELL—Frank, Dept. 454-0. Seniority date Feb. 28, 1957, retired Feb. 27.

SMITH—John L., Dept. 193-1. Seniority date Feb. 24, 1941, retired Feb. 27.

TABER—Dale H., Dept. 143-6. Seniority date April 9, 1956, retired Feb. 2.

TABOR—Carl W., Dept. 027. Seniority date Oct. 18, 1946, retired Feb. 27.

TAIX—Ernest R., Dept. 780-6. Seniority date Oct. 24, 1960, retired Feb. 27.

WILLIAMS—William R., Dept. 831-0. Seniority date July 26, 1957, retired Feb. 27.

Rider-Driver

CONVAIR

RIDE WANTED—From 39th & Meade to Lindbergh Field plant, 8 a.m.-4:45 p.m. shift. Phone Kay Knoff, ext. 671 LF or (home) 282-2743.

RIDE WANTED — From Washington Ave. & El Cajon Blvd., El Cajon, to Lindbergh Field plant, 8 a.m.-4:45 p.m. shift. Call Linda Mann, ext. 1816 LF or (home) 447-6260.

Personals

CONVAIR

Your comforting expression of sympathy is deeply appreciated by the family of Walter P. Hentz.

* * *

I wish to express our thanks and deep appreciation to the many friends in the Electronics division for the flowers, contributions and acts of kindness and sympathy extended to me and my three children since the death of my husband.

Mrs. Vernon Bernard

* * *

Margaret Barthel, wife of Ted Barthel (formerly Dept. 400-0) is undergoing heart surgery at St. Francis Hospital, Roslyn, Long Island, N.Y. She is in need of 30 pints of blood. Donors please specify name of recipient at San Diego Blood Bank.

* * *

Thanks and appreciation to our many friends for their kind expressions of sympathy on our recent bereavement.

Evelyn and Ralph Bailey

* * *

We wish to express our thanks to each one for the kind thoughts, cards, and flowers that cheered my husband during his long illness.

Mrs. James "Mac" McCoy & family

Deaths

CONVAIR

ENGELHARDT — C. H., retired April 27, 1962, Dept. 403, died Feb. 23. Survived by his wife, Leela.

HODGE—William I., retired Jan. 30, 1970, died March 3. Survived by his brother Milton.

McCOY—James H., retired Feb. 9, 1968, died March 4. Survived by his wife Etta.

MILLER — Ernest, retired Aug. 4, 1959, died Feb. 18. Survived by his wife, Dorothea.

PRINGLE—Ervin G., retired Dept. 763, Aug. 28, 1968, died Feb. 1. Survived by his wife, Fannie.

ELECTRONICS

BERNARD — Vernon L., Dept. 423, died Feb. 26. Survivors include his wife, Lorraine, a sister and three brothers.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Airline Joins Shuttle Team

(Continued from Page 1)

responsible for the orbiter and systems integration.

"We will be looking to American Airlines' experience for maintenance and ground handling of crew and cargo, since the shuttle will be transporting 12 passengers, two-man flight crews, and huge cargoes into space in the late 1970s," said Buz Hello, NAR Space Division vice president and shuttle program manager.

O. T. Flieg, vice president American Airlines Maintenance and Engineering said "Like today's jet airliner, space shuttle will incorporate commercial, cost effective techniques, computer programming of maintenance and the safest and most economical on-board systems."

Radar Station OK For Production

(Continued from Page 1)

Worth division, Convair, and the Defense Contract Administration Services Office.

Team members were:

L. J. Brown, J. G. Jones, and W. W. McComb, all of Fort Worth division.

K. G. Bowman, Les Dassoff, W. J. DeLaFont, J. B. Harrison, Wally Jeancon, D. I. Keffler, D. F. Ognibene, G. S. Oliver, and Pete Petiford, all of Convair.

K. R. Bushore, M. R. Conklin, Edward Dailey, J. F. Harrison, L. C. Larson, A. R. Pond, W. H. Turner, DCASO.

General Dynamics is an Equal Opportunity employer.

New Handling Equipment Eases Material Flow, Storage Space

New equipment in Convair division's Dept. 836-1 raw stores and warehousing area in Bldg. 4 at Lindbergh Field has made possible a 73 per cent reduction in storage rack space and is enabling employes to handle heavy boxes and large pieces of metal sheet stock with minimum effort and maximum efficiency.

J. N. McPheeters, chief of stores and traffic, said the continuing modernization program has been planned for maximum utilization of storage space and ease of material flow and handling from storage areas to saws, shears and other equipment in the adjacent "first cut" area.

G. E. Garrison, general foreman of warehousing and stores, and Marvin Goodall and Frank Ryan, raw stores foremen, have had key roles in planning and implementing the improvements.

Modern 20-foot-high storage racks, assembled like individual segments of an erector set and with adjustible 3,000-pound-test cantilever arms, have replaced old 12-foot storage racks and bins. A single pin locks each arm into place on the new racks.

Skin planks for aircraft and similar materials are stored directly across the rack arms and extrusion types of material are loaded onto long metal "pans" and then lifted into place in the racks.

A Raymond side-loader with a five-ton load and 20-foot lift capacity is being used to place material with precision into the storage racks.

Charles S. Hardisty, Dept. 202-4 industrial engineer for the modernization program, said the new 20-foot racks have reduced floor space that would have been required by the end of 1970 for such storage from 49,200 to 23,300 square feet.

Eighteen mobile tables—actually 8, 16, and 24-foot-long table-high material moving carts with molded rubber tires—have been put into use for easier material moving. The mobile tables are equipped with standard tug attachments so they may be moved by power vehicles as well as by hand.

One of the most unique new material handling tools recently placed in use is an "outer-space looking device" with 24 vacuum "feet" called a Vac-U-Lift that moves individual 24-by-30-foot DC-10 skin stock and other large sheet material from shipping crates to a paper applicator and "first cut" machines.

A small compressor on the Vac-U-Lift generates 23 pounds of vacuum to hold the sheet materials being moved and a hydraulic cylinder can be activated to turn the device at an angle for placing the sheet of material on A-frame handling carts.

A green light on the Vac-U-Lift indicates when adequate vacuum is being generated and a red light when vacuum is off or is not being maintained at safe level.

McPheeters said the Vac-U-Lift eliminates problems that would be encountered in moving of the skins manually or with other devices, including danger of creasing from bending of the metal sheet. Each of the vacuum "feet" on the device are kept wrapped in plastic to keep them from collecting dust and lint.

Two new three-ton-capacity "clam shell" sheet stock handlers have been obtained for use in moving heavy crates of sheet stock between unloading, storage, and usage areas. A wheel at one end of each of the "clam shells" is used to adjust steel pick-up bars to correct width for support of crates to be moved.

Both the Vac-U-Lift and the "clam shells" are used in conjunction with a five-ton-capacity overhead crane for moving material throughout the building.

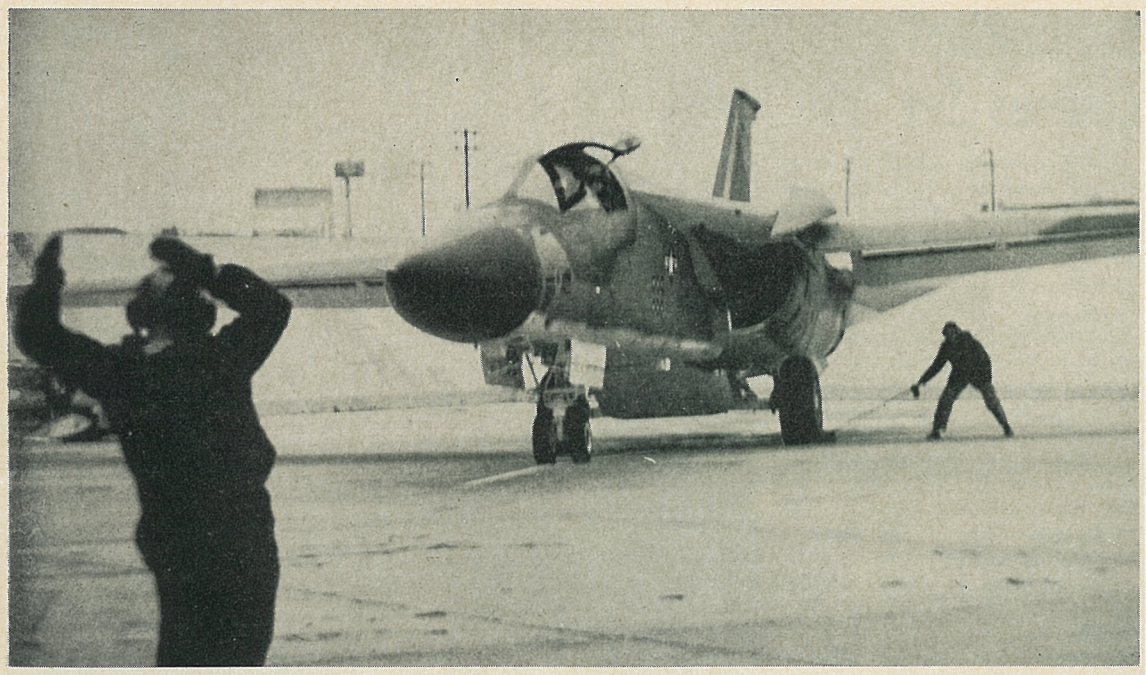
McPheeters said modernization of the raw stores area will continue this year with installation of additional 20-foot shelving and purchase of another Raymond side-loader and additional power tugs.

MOVING UP—Modern 20-foot-high racks with adjustable shelves has enabled Convair division to reduce storage space by 73 per cent in Bldg. 4 at LF and clear needed area for temporary storage of DC-10 skin "plank" material. John E. Dorsey, Dept. 836-1 raw stores stock clerk, uses new side-loader to lift "pan" of material into place.

Now It's Convair 'Management Assn.'

The Convair Management Club has changed its name to the Convair Management Association.

The change was made, according to Herb Day, 1st vice president, because the organization "has the image and purpose of fostering professional development and is therefore an association, not a club." In addition, Day said, the name conforms with the title of the national organization, the National Management Association.



LET 'ER ROLL—FB-111A No. 5, test bed for the short-range attack missile (SRAM) resumes flight testing from Fort Worth division.

Goldwater Defends F-111 as 'Greatest' In Armed Services Committee Testimony

Senator Barry Goldwater has called the F-111 the world's greatest aircraft for its purposes.

"I have flown the F-111," Senator Goldwater testified recently before the Senate Armed Services Committee. "I have talked with the commanders and I have talked with the pilots. I think I have talked with almost every responsible person in the Air Force, military and civilian . . .

"I tell you . . . that without a shadow of a doubt it (the F-111) is the greatest aircraft for its purpose in the inventory of any Air Force in the world."

Senator Goldwater said the Air Force in 1960 set down requirements for a combat plane of the future that were "very strict and pushed the limits of aeronautical technology."

"The aircraft they sought," testified the retired Air Force major general (reserve), "has become the F-111, the most inaccurately pictured and most unfairly maligned weapon system ever developed in this country.

"Every major objective has been met and what has resulted is the most versatile, the most capable aircraft in the world for its assignments."

Senator Goldwater said the F-111 is an all-weather aircraft that has met every major program objective:

Supersonic speed both on the deck and at altitude; intercontinental ferry range without refueling; ability to penetrate enemy defenses unescorted while carrying either conventional or nuclear weapons; virtually error-free navigation; extreme bombing accuracy; ability to take off and land on a short, unprepared field; greater reliability; and lower maintenance requirements than any other airplane.

"Its terrain-following radar, exclusive to the F-111, permits it to penetrate enemy defenses undetected," the senator said. "On the 50-plus missions flown in Viet Nam, the enemy initiated defensive action on 88 per cent of the missions, yet the aircraft received no known hits.

"It is extremely important to note that the F-111 is the only aircraft to be specifically mentioned by the Soviets during the recent SALT talks, as a matter of concern to them."

Senator Goldwater, who started flying in 1930 and has flown over 10,000 hours in well over 100 different types of aircraft, called the F-111 the "only modern tactical or strategic bomber we have coming off the production line."

"If we do not provide the Air Force with the numbers they want," he said, "we will not have an Air Force equipped in the mid-70s to meet the challenges that we may well be faced with.

"In Europe, the NATO leaders are counting on this aircraft, and around the world those nations to whom we have promised mutual support look upon this airplane as the one that will meet any of the threats of the 70s and will be a proper carry-on to meet the new generation embodied in the F-15 and the B-1, which will not be in our inventory until the latter part of this decade."

He said the Strategic Air Command version — the FB-111A — will give the Air Force the manned capability it must have to fill the gap caused by phasing out B-52s and B-58s.

"We have invested $6.2 billion in the F-111," the senator said, "of which about $1.6 billion is in parts and materials to be assembled into aircraft on the production line.

"For this we now have 230 F-111s. For an additional investment of $1.5 billion we can procure 324 more F-111s, and I urge that this be done. We must keep the production line open so the Air Force can have the numbers of aircraft they need."

Senator Goldwater said a cutback in the number of aircraft to be produced, changes made by the government, inflation and other matters beyond anyone's control have increased the cost of the F-111.

"Increase in cost or not," he said, "its capabilities make it worth every penny. In its Tactical Air Command version, the F-111 will carry three times the bomb load twice as far as the aircraft with which it must be compared.

"It flies at supersonic speed at treetop level over the roughest terrain, making it invisible to enemy radar. It bombs accurately at midnight in bad weather, more accurately than other aircraft can bomb at noon on a cloudless day.

"The F-111 requires no host of escort aircraft for flak-suppression, electronic countermeasure, tankers and other aircraft required by all of our other airplanes.

"This is important not only from an operational standpoint, but because of the simple fact that four F-111s with an annual operating cost of $5.2 million will do the same job as a very large conventional strike force that costs $33.6 million in annual operation."

Senator Goldwater told the committee that the F-111 has the best safety record of any Century Series aircraft — whether viewed from number of accidents, fatal accidents, or accidents in operation flying.

Stromberg-Carlson Wins 'Best Improvement' Award

The Best Improvement Award in General Dynamics' annual Corporate-wide safety contest has been won by Stromberg-Carlson for the second consecutive year.

Stromberg-Carlson had a 51.35 per cent improvement in frequency rates for 1969 versus its three-year average. The 1969 frequency rate of .54 accidents per million manhours worked was 77 per cent better than the industry average. The severity rate was five times less than that recorded by the industry as a whole.

Ardmore operation attained an outstanding record of 23.5 months without a lost-time accident — during which 2,362,719 manhours were worked. More than 1,500,000 manhours also were worked at the Charlottesville facility without a disabling accident.

MOST IMPROVED—Roger Lewis, General Dynamics president, hands over framed certificate to Dause L. Bibby, president of Stromberg-Carlson, in recognition of S-C's 1969 safety record which was most improved in Corporation. In center is Algie A. Hendrix, Corporate vice president.

Talented Turi

Pretty Scandinavian Co-Pilot Adds 'Firsts' For Convair 440

The Convair 440 Metropolitan, a first class airplane, has chalked up another pair of firsts—it's the first choice of the first woman pilot for a major commercial airline in the western world.

She is Flying Officer Turi Wideroe whose assignments for Scandinavian Airlines include serving as co-pilot of a 56-passenger Convair 440 on a six-city Lappland route above the Arctic Circle.

Turi picked the Convair 440 over a DC-8 as third officer because she considered the 440 more of an opportunity.

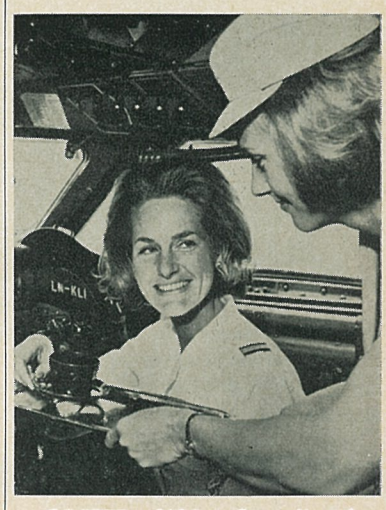
"As co-pilot on the 440s I get to do landings and takeoffs and I am constantly learning," she said.

Turi, a 32-year-old blonde Norwegian, took up flying after graduating from art school in Oslo. She then joined Wideroe Airways, a nine-aircraft feeder line serving northern Norway. She worked as a bush pilot flying deHaviland Otters and Twin Otters and was captain of a seaplane when she decided to apply for a job with Scandinavian Airlines.

Although the airline had never accepted a woman for pilot training before, she was accepted. Her basic ground training began in 1968 and she was assigned to the Convair 440 in mid-1969.

Turi's flight assignments also take her to Denmark and Sweden where she works the world's shortest scheduled international route, the 10-minute hop over the narrow strip of Baltic Sea between Copenhagen and Malmo, Sweden.

She will continue to fly 440s for at least two more years, when her growing seniority and the gradual retirement of propeller-driven aircraft from SAS' domestic routes will make her eligible for the co-pilot's seat in the DC-9. After 12 to 14 years seniority, she will earn candidacy for the SAS captains course.



COFFEE, SIS?—Scandinavian Airlines' Turi Wideroe, co-pilot of a Convair 440, gets coffee from her stewardess sister Kari Wideroe.

Office Established For 1973 Mission

NASA's Jet Propulsion Laboratory, Pasadena, has established a Mariner Venus - Mercury project office to manage the dual planet mission scheduled to be launched from Cape Kennedy by an Atlas-Centaur launch vehicle in late 1973.

Walker E. (Gene) Giberson has been named project manager; John R. Casant, spacecraft system manager; Victor C. Clarke Jr., mission analysis and engineering manager; James E. Wilson, assistant spacecraft system manager.

BRAIN PICKING—Employe Suggestion administrators from seven divisions/subsidiaries gathered in Toronto, Canada, recently during National Association of Suggestion Systems annual convention. From left: Bob Giambrone and Charlie Scott, Stromberg-Carlson; John Carlos, Canadair; John Kodweis, Electronics; Tom Slobodrik, Resources Group; Jack Gardner, Quincy; Dave Brown, Electric Boat; Arch Rambeau, Corporate Headquarters; Buck Roberson and Bill Fleet, Fort Worth.

COST AVOIDANCE — General Dynamics Procurement Quality Control working group met recently in Rochester, N. Y., hosted by Electronics division. Group aims toward maximum efficiency by collective use of experience, knowledge and services. During past five years, group achieved cost avoidance savings to Corporation of $2,451,580. Clockwise from right foreground are R. T. Joyce, Electric Boat; E. A. Runci, Quincy Shipbuilding; C. S. Wilkinson, Electric Boat; J. J. Novak, Electronics; J. C. Carroll, Fort Worth; S. T. Brucker, Electronics; F. S. Gala, Stromberg-Carlson; B. H. Fleeman, Pomona; C. S. Jaworski, Electronics; F. Clow, Canadair; T. J. Donnelly and R. H. Nicholson, Electronics-SD; standing S. Braun, Convair, and J. C. Schulz, Pomona.

FIRST AWARD—Harriett Fisher of Dept. 507-0 receives Convair's first Cost Reduction Achievement Award pin and citation from Lyman Josephs, division general manager. Others, from left, are John Wild, director of engineering technologies, and Ed Heller, manager of cost reduction and value control.

Convair Engineering Assistant Gets First Achievement Award

Harriett M. Fisher, a Convair Dept. 507-0 engineering assistant at the General Dynamics' high speed wind tunnel, recently was awarded the division's first Cost Reduction Achievement Award pin.

The five-credit pin, lavender and white with an amethyst seting, was presented by Lyman C. Josephs, Convair vice president and general manager, in ceremonies at the wind tunnel also attended by John Wild, director of engineering technologies, and Ed Heller, manager of cost reduction and value control.

Credits toward Cost Reduction Achievement Award pins are being counted for each Employe Suggestion, Value Control Project, or Cost Reduction Project approved after Dec. 15, 1969, in a two-year program to recognize Convair people who consistently contribute to cost reduction efforts.

Pins of different colors and with different types of settings also will be awarded for 10, 15, 20, and 25 credits.

Mrs. Fisher, who handles computer data for high speed wind tunnel tests, became first recipient of a five-credit pin for having had six Employe Suggestions approved on Jan. 16 and 23. In addition to the award pin and an accompanying certificate, she received award checks totaling $227.30.

Action resulting from her suggestions has:

1. Eliminated automatic computer print-out of unneeded data in cases where only an addendum is needed.

2. Eliminated time-consuming hand-calculation of location of data to be displayed from computer disks by inclusion of a location column on the index listing.

3. Substituted magnetic tape for back-up disk cartridges, eliminating time required for cartridge exchanges and permitting data copying or restoration without demounting of the disks.

4. Provided for computer printing instead of hand-stamping of classification when the computer output data involves both classified and unclassified material.

5. Instituted a procedure under which specific data may be displayed from a computer disk without the computer being taken "off line."

6. Replaced carbon paper being used on a plotter device with a larger size that can be fitted to the drum easier and will have a longer usage span and produce better copies.

Mrs. Fisher has been with Convair 14 years and with the high speed tunnel for nine years.

Second from the division to qualify for one of the five-credit pins was W. G. Lux, a senior reliability engineer in procurement quality engineering Dept. 144-1 at Kearny Mesa.

His pin was presented by L. I. Medlock, director of reliability control, and Heller and was for four Cost Reduction Projects and one Employe Suggestion.

Lux' CRPs resulted in:

1. Use of an oxygen analyzer to determine acceptability of liquid nitrogen being purchased.

2. Purchase of reference books on transistors and semi-conductors to reduce out-of-area time spent by procurement engineers in obtaining such data.

3. Elimination of an unnecessary duplicate file of quality verification laboratory reports.

4. Spraying of plastic paint on labels of containers being stored in the "barrel yard" to keep them from fading and eliminate costly testing for reidentification of the stored liquids.

His ES was a safety suggestion related to storage of flammable materials that resulted in containers being relabeled and a surrounding area being cleared to reduce fire hazard.

If one copy is sufficient, why order more?

Six In-Plant Courses Set

The University of California extension program, in cooperation with Convair, is offering six in-plant courses for the spring quarter.

The courses, all at Kearny Mesa, are:

Introduction to Management Sciences, taught by Robert Huntoon, 5-8 p.m. Mondays, Room 2, Bldg. 26, 12 meetings, March 30-June 12.

Leadership Principles and Practices, taught by Dave Chigos, 5-9 p.m. Friday, 8 a.m.-5 p.m. Saturdays, presentation room, Bldg. 2, six meetings, April 3-18.

Introduction to Information Processing and Computer Programming, taught by Frederick Schwend, from 8-5 p.m. Thursdays, Room 7, Bldg. 17, 12 meetings, April 2-June 18.

COBOL, taught by John Hicks, from 5-8 p.m. Wednesdays, Room 7, Bldg. 17, 12 meetings, April 1-June 17.

Integrated Information Systems, taught by Charles Twohey, from 5-8 p.m. Tuesdays, Room 1, Bldg. 26, 12 meetings, March 31-June 16.

Dynamics for Organizational Effectiveness, taught by Dave Chigos, from 5-9 p.m. Fridays, 9 a.m.-5 p.m. Saturdays, presentation room, Bldg. 2, six meetings, May 8-23.

In addition to the in-plant courses, three others are being taught by Convair employes in the extension program. They are:

Methods and Procedures for Information Systems, taught by Charles Twohey, 7-10 p.m. Thursdays, Gate 2, off Barnett, Marine Corps Recruit Depot, 12 meetings, April 2-June 18.

Automatic Control Systems, taught by Alan Nelson, from 7-10 p.m. Mondays, Room 113, Roosevelt Junior High School, 12 meetings, March 30-June 15.

Jet Propulsion, taught by Paul Stephens, from 7-10 p.m. Tuesdays, Room 126, Roosevelt Junior High School, nine meetings, March 31-May 26.

Courses cost $60 except for Jet Propulsion which has a fee of $45. For information call educational services, ext. 491 LF.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—When popular items such as desks are on sale at the salvage yard, why should one person be permitted to pull price tags on several, thus depriving someone else of a chance to buy?

A—Policy provides limiting sales of popular items to one or two to a customer and a sign is normally posted giving the limit. It is recognized that one person can pull more tags than the limit, but it will do him no good because no more than the limit will be written up at the sales desk.

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Q—To what extent do Convair manufacturing activities contribute to air and water pollution?

A—Convair operations meet county, state and federal regulations and the division continually monitors and reports to appropriate agencies as required. To date Convair's record is considered good.

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Q—Is there some way to get faster service from maintenance regarding minor repairs?

A—It is policy for maintenance to take care of minor repairs in the order in which they are received. Requests should be phoned to the plant dispatch center. The phone numbers are 1130 at KM, 575 at LF and 2050 at Plant 19. If service is not received in a reasonable time the general foreman of maintenance should be notified.

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Q—A new holiday for Convair, Washington's birthday was observed this year on a Monday. In years when it does not fall close to a weekend, could Convair celebrate it on a Monday or Friday to permit a three-day weekend?

A—Yes. Starting in 1971 Washington's birthday will always be celebrated on the third Monday in February, in accordance with recent action of Congress. During 1970 there will be a total of seven long weekends, four of them three-day and three four-day.

COMBAT AWARD — Lt. Col. Emil M. Kuebler receives congratulations from Col. Charles F. Merz after receiving Air Force Distinguished Flying Cross for "extraordinary achievement while participating in aerial flight as a B-52 combat aircrew member" in Viet Nam. Col. Merz, commander of San Diego DCAS District, presented medal. Col. Kuebler is now stationed at Convair under Air Force Education-with-Industry program.

Convair Quality Engineer Leads Co-Ed Scout Trip Down Colorado

Dwain G. Rice, a senior quality control engineer in Convair's Dept. 144-1, last month led 25 teenagers from co-educational Explorer Scout Post 209 on a three-day, 30-mile canoe trip down the Colorado River from Walter's Camp to Martinez Lake.

The 14 girls and 11 boys from the "high adventure" Post, sponsored by Memorial Baptist Church in Serra Mesa, explored several abandoned mines and found a hidden lake during the down-river expedition.

Rice and his wife, Mary, and their seven-year-old twins, Bruce and Linda, occupied one of 13 canoes used by the teenagers and their eleven adult chaperones on the trip. Other parents provided transportation to and from the river.

Only real concern along the way came when one of Rice's twins was found playing with a scorpion along the river bank and when one of the canoes, being paddled by two girls and with a boy asleep in the center, overturned after colliding with a low-hanging tree limb. Camping gear in the overturned canoe was so tightly packed nothing was lost.

Teenagers making the trip previously had proven their proficiency in the water by swimming 100 yards fully clothed and by righting swamped canoes during a "shakedown cruise" in Mission Bay.

Rice, adviser for the Post, favors co-educational Explorer activities—a recent innovation in the Boy Scouts program.

"The girls have really made our Post go," he commented. "They are good organizers and motivate the boys to keep work on projects going. A co-educational program also enables the teenagers to associate with one another without the pressures inherent in dating."

Improved X-ray Technique Wins Air Force Praise

An X-ray innovation developed for use in the F-111 program has won an Air Force Cost Reduction award for Convair and its developer, C. E. Boyd, Dept. 149-0.

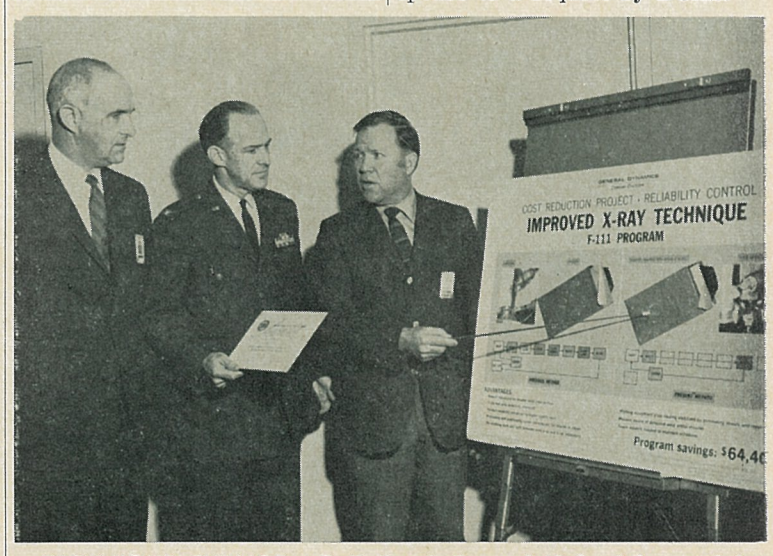
The award, one of 20 given by the Air Force in 1969, was presented by Col. Charles F. Merz, commander of the Defense Contract Administration Services Region — San Diego, in ceremonies at Convair.

The new technique is credited with a $64,000 savings for one year and reduced a 19 step operation to 11 steps.

Before development of the improved technique, each X-ray inspection of a complex welding operation required a cooling period after welding and removal of the hardware from its fixture for transportation to the X-ray facility. Each item required approximately 17 reworks per assembly and 28 hours for each rework. The procedure was required because of the normal limitations of X-ray at high temperatures.

Boyd developed a heat shield which protects the X-ray film and at the same time would not affect the radiations by absorbing and/or scattering the X-ray beam.

The procedure was submitted to DCAS last summer by Convair President Jack L. Bowers in response to a request by DCAS.



TECHNIQUE CHANGE—C. E. Boyd, Dept. 149-0, right, explains his improved X-ray technique to Convair President Jack L. Bowers, left, and Col. Charles F. Merz, DCASR commander. Boyd was presented an Air Force Cost Reduction award.

Adventurers Plan Weekend Trip Across Baja Border to El Tajo

CRA's Adventurers will spend this coming weekend (March 21-22) on a car camp and backpack trip at El Tajo, largest canyon of the Sierra Juarez mountains in Baja California.

Those making the trip will rendezvous at 8:10 a.m. Saturday in Tecate (the border opens at 8). They then will drive east 30½ miles on Highway 2 to El Condor, south on a dirt road 17.6 miles to the La Milla ruins at El Progreso, and east about 7 miles to the camp area.

The car camp will be set up in a primitive high desert area where there is plenty of firewood but no water or sanitary facilities. After lunch Saturday, the backpackers will hike three miles to the bottom of the canyon to set up their camp.

Backpackers will explore the bottom of the canyon before returning to the car camp early Sunday afternoon. They are being asked to carry one or two quarts of water since good water will be available in the canyon bottom.

John Smaldino, phone 279-2798, will be trip leader. Tourist visas will not be required but Mexican auto insurance is recommended.

* * *

"The Indian Americans of the greater San Diego area," a culture-history survey of area Indian tribes from aboriginal times to the present, will be presented by Mrs. Florence Shipek, a San Diego anthropologist, at the CRA Adventurers Club meeting at 7:30 tonight in the CRA Clubhouse.

Mrs. Shipek has been researching history of the area Indians for 15 years and will display artifacts including fine arrow points and baskets to refute the often-held theory that early tribes in Southern California were dull and shiftless nomads.

Principal tribes in the San Diego area were the Diegueno, Luiseno, Cupeno, and Cahuilla.

Sell-Out Seen At Disneyland

The Haunted Mansion, Disneyland's long awaited fun-scare adventure, is among the attractions waiting for General Dynamics families at the April 11 Night at Disneyland.

Tickets are on sale at all CRA and employe benefits outlets and designated ticket offices at $3.95 per person. The cost of the admission covers unlimited use of all attractions except the shooting galleries. Parking is free.

Ticket sales will close at noon, Thursday, April 9. Don Evanson, planning committee chairman, said he expects a sell-out and urged employes to purchase tickets as soon as possible.

The event is being sponsored by the Convair Management Association.

'Mickey Mouse' Golf Scheduled March 28

Convair Management Association's 10th annual Mickey Mouse golf tournament is scheduled for March 28 at Torrey Pines—with a "shotgun start" to send more than 150 participants off simultaneously from all course tees at 6:30 a.m.

No advance handicap is required for the five-flight fun event and women employes and wives have been invited to play.

Participation will be limited to the first 164 to register. Phone Terry Kell, ext. 1465 LF, for sign-up information. Cost will be $5.

Kell said a "blind draw" will be made of six holes for the Mickey Mouse scoring. Each player's score for those six holes will be multiplied by three and the 72-par will be substracted for net scores.

Winners will receive gift certificates and other prizes.

Rockhounds Slate Trip to Palo Verde

A rock and mineral gathering field trip to Pebble Terrace-Palo Verde near Blyth, Calif., is on tap for CRA Rockhounds this weekend (March 21-22).

Petrified wood, agate, jasper and chalcedony are among the rocks and minerals found in the area. The site is a dry camp and members are advised to bring wood and water. Trip leader is Ken McCafferty, available at ext. 1739, LF for information.

The club's sixth annual Rockhound Show is slated for April 18-19 in CRA Auditorium. The next regular meeting is April 15 in CRA picnic shelter.

Linkswomen Slate Tourney at Rancho

General Dynamics Women's Golf Club held their Feb. 14 tournament at the Mission Bay links.

Winners were: Flight A—Nadine Prior; May Dean Schell; Flight B—Rose Hubler; Vi Nye.

The club's next tourney is scheduled April 11 at 8 a.m. at Rancho Bernardo. Guests and new members are encouraged to attend.

'Shoot-Out' Decides Winners at Range

A rapid fire "shoot-out" was required to decide the second and third place winners in Masters class competition at the CRA Pistol Club's March 8 matches at Police Pistol Range.

Warren Walker (96) won over Harry Black (91) in the tie-breaker which allowed each man 10 seconds to fire 10 shots.

Match results were: Masters—Roland Schneider, 289-5x; Walker, 283-8x (96); Black, 283-8x (91); Expert — DeLeon Thomas, 293-8x; Richard Sutton, 280-8x; 45cal. Short National — Charles Kropp, 272; Schneider, 265; Ernie Kampmann, 245; Jerry Lehrer, 238; Sharpshooter — Ron Cole, 240; James Thomas, 149.

The club plans a match with Cubic Corp. for April 12. The club's regular match will be Sunday (March 22) at 9:15 a.m. at the Police Range.

Satellites' Impact Topic for Address

Edwin J. Istvan of Communications Satellite Corp., will be the main speaker at the April 13 meeting of the San Diego section, American Society for Quality Control.

Istvan's topic will be "The Impact of Communications Satellites." The meeting, scheduled for 6:30 p.m. at the Catamaran Hotel, is sponsored by Convair division.

For information call Sam Petcher or Eric Callard, ext. 2243 KM.

Bicycle Club Plans 50-Mile Ride Sat.

The CRA Bicycle Club will take a 50-mile ride beginning at 7:30 a.m. Saturday, March 28, touring parts of Mission Valley, Kensington, State College, Lemon Grove, El Cajon, Mission Gorge, Old Town and Balboa Park.

They will meet in Balboa Park behind the organ pavilion. Ride leader is Myke Dickey, ext. 1551 KM.

In-Plant Courses Draw Record Number

A record 391 Convair employes are enrolled in 17 in-plant San Diego Evening College spring courses at Lindbergh Field and Kearny Mesa.

Hal Rubin of Dept. 130-3, coordinator, said nine courses are being given in supervision, two in blueprint reading, two in electrical drawing, and one each in advanced illustrated parts cataloging, math, industrial safety, and occupational safety.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111, Kearny Mesa. Deadline for next issue of GD/NEWS is April 7. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS — Meeting tonight, March 18, 7:30 p.m. Car camp and backpack to El Tajo in Baja California, March 21-22.

BICYCLE CLUB — El Cajon 50-mile ride, March 28, meet at Balboa Park Organ Pavilion, 7:30 a.m.

BONAIR FLYERS—Meeting April 2, 7:30 p.m.

BRIDGE — Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB — Meeting April 5, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS — Meet Tuesdays and Thursdays, 9 a.m.-noon and 7-10 p.m.

CHORUS — Rehearsals Mondays, 7:30 p.m.

COINEERS—Meeting April 14, 7:30 p.m.

COUNTRY AND WESTERN MUSIC—Meet each Thursday, 7:30 p.m.

DELTA DIVERS — Meeting April 8, 7:30 p.m.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB—Potluck, 6:30 p.m., meeting 7:30 p.m., April 14, Gillespie Field Clubhouse.

GARDEN CLUB — Meeting April 1, 7:30 p.m., Floral Association Bldg., Balboa Park.

GOLF — Coronado tournament, April 11-12, tee-off 7:30 a.m.

GUN CLUB—Fun shoot, March 29, 9 a.m., Gillespie Field gun range.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m. Monday through Thursday; 9:30 a.m. to 9 p.m. Fridays; 10 a.m. to 5 p.m. Saturdays; "Women only" weekdays, 9:30 a.m. to 11 a.m.

HI-FI MUSIC — Meeting April 14, 7:30 p.m.

ICE SKATING—GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Interstate 8 and Lake Murray Blvd., flat rate fee $1.00 (includes skates).

JUNIOR SCIENCE — Meeting March 20 & April 3, 7:30 p.m.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Wednesday, 7 p.m., CRA Missile Park.

ORGAN CLUB—Meeting March 24, 7 p.m., in the home of Mr. & Mrs. Arthur Ramsey, 4505 Leon St., Ocean Beach.

PISTOL CLUB—Club shoot March 22 and April 12, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB—Meeting March 19 and April 2, 7:30 p.m.

RIDING CLUB—Old fashioned shindig jamboree March 20, CRA Missile Park. Meeting April 8, 7:30 p.m.

RIFLE CLUB—Senior shoot March 25 and April 8, 7 p.m. Junior shoot March 21, April 4, 9 a.m. Gillespie Field Range.

ROADRUNNERS—Meeting March 26, 7:30 p.m. Gillespie Field Clubhouse.

ROCKHOUNDS—Field trip to Pebble Terrace, March 21-22.

SAILING — Meeting March 25, 7:30 p.m.

SCULPTURE — Workshop sessions Mondays, 7:30-10:30 p.m.

SKI CLUB—Meeting April 7, 8 p.m., South Bay Club.

SPECIAL EVENTS—Disneyland night, April 11, 8:30 p.m.-1:30 a.m.

SPORTS CAR CLUB—Meeting April 8, 7:30 p.m.

SQUARE DANCE—St. Patrick's Day costume ball March 19, 8-10:30 p.m. Dance each Thursday, 8-10 p.m.

STAMP CLUB—Meeting March 26 and April 9, 7 p.m.

SWIMMING — Family swim night March 21, 7-9 p.m., Mission Beach Plunge. Tickets at employe benefits outlets, 5 cents.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays, 10 a.m.-4 p.m.

TOASTMASTERS — Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamic Toastmasters No. 457, Thursdays, 5:30 p.m.

TRAILERS — Meeting April 7, 7:30 p.m.

WIVES CLUB—Potluck and craft session March 25, 10 a.m.

WOMEN'S GOLF — Rancho Bernardo tournament, April 11, tee-off at 8 a.m.

Mgt. Assn. Members Earn Certificates

Three Convair Management Association members were awarded the first three Certificate in Management Skills at the club meeting March 11.

The three, D. L. Fleury, Dept. 954-1, V. J. Lima, Dept. 146-3, and W. G. Lux, Dept. 144-1, received the certificates from Lyman Josephs, Convair vice president and general manager.

The certificates have just been established "in special recognition of employes who have attended prescribed management training courses."

Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, April 4. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. No canvas or open-toed shoes and no bare feet.

'My Country' Benefit Tickets On Sale

Tickets are on sale at all Convair and Electronics-SD employe benefits and CRA outlets for the "This Is My Country" benefit performance at 8 p.m., April 11 in Grossmont High School auditorium.

Featuring the Southern California Music Masters' 40-man a cappella chorus under the direction of Bob Gray, the performance will include a "parade of presidents," Lincoln's Gettysburg Address, and a wide range of patriotic musical selections.

Guest "barbershop" groups performing will be the Gaslight Harmony Four, the Manhatters, the Esquires, the Odds and Ends, the Blues and Gray, the Heartbeats, and the Sweet Adelines.

Proceeds will go to the Institute of Logopedics in Wichita, Kan., which helps correct speech and deafness problems in children. The SPEBSQSA (Society for the Preservation and Encouragement of Barbershop Quartet Singing in America), with which the Music Masters and guest groups for the performance are affiliated, has given $485,000 to support the institute since 1964.

Convair Son Wins Writing Competition

Glen Evans, 17-year-old son of graphic designer Harold Evans of Convair division's Dept. 517-0, recently won the $100 first prize in the Naval Electronic Laboratory Center's 11th annual technical writing competition.

Young Evans, a high school senior, also received an additional $50 Frank R. Dallezotte memorial award for submitting the best paper on biomedical science in the competition. His winning entry was titled "Granulocytic leukemia: requirement for L-serine and inhibition by L-serine dehydratase."

He won four awards in the Greater San Diego Science Fair and second place in the NELC technical writing competition last year.

ASQC Schedules Annual Conference

The San Diego section of the American Society for Quality Control will hold its ninth annual quality control conference March 28 in the Aztec Center at San Diego State College.

Charles F. Horne, Pomona division president, will be one of the principal speakers.

Convair division's Fred Baebler, Dept. 143-0, Bill Lux, Dept. 144-1, and Sam Petcher, Dept. 140-2, are on the seminar planning committee. Val Wynn, Dept. 143-3, will moderate the inspection section discussion period.

Mayor Frank Curran has proclaimed March 22-28 as "Quality Control Week" in San Diego in support of the objectives of the ASQC.

Bargain Tickets

The following tickets are on sale at all CRA and employe benefits outlets:

National Junior Olympic hockey tournament, April 3-5 at San Diego Sports Arena; $5 tickets are good for all 22 games during the three day event.

"This Is My Country," a concert for the benefit of the Institute of Logopedics, at 8 p.m. Saturday, April 11, at the Grossmont High School auditorium. Singers are the Southern California Music Masters of El Cajon. Donation is $2.50.

GD Men Have Roles In ORSA Meeting

The San Diego section of the Operations Research Society of America will host a regional meeting for Western and Rocky Mountain ORSA sections Friday (March 20) in the Bahia Hotel.

Eighteen papers will be presented on scientific methods and operations research in management, aeronautics, and military problems.

Dr. J. V. Ravenis of Electronics-SD is chairman of the host section. C. D. Nelson of Convair's Dept. 589-2 will give a presentation on "Systems analysis of large networks of ocean data stations" and R. S. Grote of Dept. 589-1 will cover "Applications of mathematical techniques of queuing theory to analysis of aircraft availability."

Luncheon speaker will be Dr. E. S. Quade of Rand Corp.

Costume Ball Set For St. Patrick's

CRA Dynamics Eights square dancing club will observe St. Patrick's Day with a costume ball at CRA Clubhouse tomorrow night (March 19) 8-10:30 p.m.

Caller will be Clark Elliott. Donation is 50 cents.

For additional information contact R. J. Collette, ext. 1050 LF or CRA Clubhouse, ext. 1111 KM.

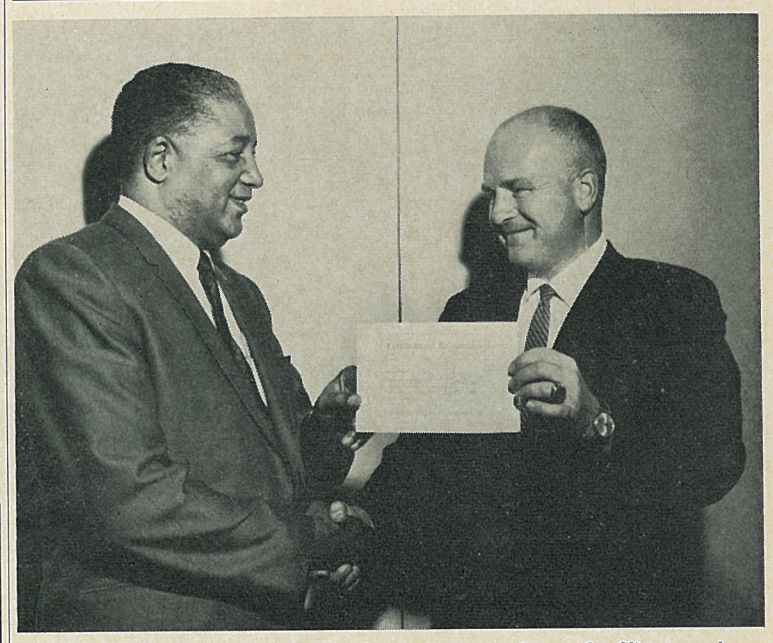
Some 200 square dancers representing 14 clubs in San Diego and Orange Counties attended the Dynamics Eights' 21st Anniversary dance.

Tours of Assembly Plant Scheduled

The Convair Management Association will sponsor five tours of the General Motors assembly plant at South Gate, April 28, 29, 30, May 1, 4.

Tours are for members and guests. Buses will leave Bldg. 2, Kearny Mesa plant at 4 p.m. each day. Cost of the round trip will be $3.

For information call Frank Berry, ext. 3676 KM. For reservations call Helen Cook, ext. 3146 KM.



MILESTONE—Jim McCann, Convair supervisor of office services, left, receives recognition certificate from Gene Fox, manager of personnel, on becoming 1,000th division employe to complete six-hour management development seminar presented by David Chigos of educational services section and incorporating material from 20 courses and publications. Phone Chigos, ext. 2564 LF, for information or enrollment for future after-hours sessions.

POLAR ORBITER—Convair-built empennage (tail section) stands out as C-5 Galaxy, world's largest airplane, creates miniature snowstorms with its four fanjet engines at Eielson AFB, Alaska, before flight around north pole.

Books Published On Flight Control

A comprehensive two-volume work on aerospace vehicle flight control systems by Arthur L. Greensite, Convair Dept. 585-0 design specialist, has just been published by Spartan/MacMillan & Co., Ltd.

The books, "Elements of Modern Control Theory" and "Analysis and Design of Space Vehicle Flight Control Systems" cover flight control technology as developed for the space program over the last 15 years.

'Galaxy' With Convair Tail Circles 'Top of the World'

A U.S. Air Force C-5 Galaxy, world's largest airplane and with a 65-foot-high empennage (tail section) built by Convair division, last month flew "around the world" in four minutes—by circling the north pole.

Temperature outside was 55 degrees below zero F. as the mammoth Lockheed-Georgia Co. test plane crossed the north pole at 33,000 feet, turned sharply, and orbited the top of the world.

The pole circling flight occurred while the C-5 test plane was operating out of Eielson AFB, Alaska, in an Air Force evaluation of its performance under extreme weather conditions.

Officials at Lockheed-Georgia say the eight planes in the C-5 test fleet, despite their size and weight, have taken off in shorter distances, climbed quicker, handled better, flown faster, and stopped shorter than anyone had predicted they would.

Convair division has delivered 25 of the massive empennages for C-5s (plus two special test articles) and has 10 others completed. Each of the empennages, with a stabilizer spanning 68½ feet, is shipped from Convair's Lindbergh Field plant in San Diego to the Lockheed plant in Marietta, Ga., in special railroad cars.

Robert W. Miller, Convair C-5 program manager, said the division has contracted to produce 81 of the production empennage units and the two test articles and currently has about 280 people working on the program.

Final static tests for the empennage are being run concurrently with the flight testing and are expected to be completed this summer.

Miller said approved engineering changes are being incorporated to bring the empennages in storage at Convair and their components up to latest configuration before they are shipped.

A report from J. M. Anderson Jr. of Lockheed-Georgia to Jack Bowers, Convair president, on an evaluation of Convair C-5 program activities by a supplier performance evaluation committee said the quality level of the C-5 empennages "continues to be outstanding."

"A strong program management team has been characteristic of Convair since the inception of the C-5 empennage program and continues to be so," Anderson wrote. "The scheduling and control of numerous miscellaneous engineering changes to stored empennages has been a trying problem but your people have handled it admirably."

Anderson said Convair has maintained schedule continually throughout the program. "We recognize that this has not been an easy task because of the impact of numerous changes, and your entire team is to be commended," he said.

An Air Force report on an inspection of the empennage for C-5 aircraft No. 0011 by Air Force quality assurance personnel stated: "It was the consensus of all four participating Air Force personnel that the quality of this assembly was the best of any area or unit thus far inspected on the C-5 program."

Despite their size, C-5s in the test fleet have flown at nine-tenths the speed of sound at high altitude. And at the other end of the spectrum, flight control at 97 miles-per-hour.

They have taken off at shorter than targeted distances with heavy loads and the structural test C-5 shattered all records for heavy takeoffs — lifting almost 800,000 pounds gross weight.

REDEYE RANGE—An instructor with 1st AIT Brigade, Fort Bliss, Texas, gives instructions on use of Redeye infrared homing weapon to Gen. W. C. Westmoreland, U.S. Army Chief of Staff, at a recent firing demonstration at McGregor Range.

Spear Commissioned In Norfolk Ceremony

USS L. Y. Spear has become the newest member of the Navy, joining the Atlantic Fleet Submarine Force in commissioning ceremonies Feb. 28 at Norfolk Naval Shipyard.

More than 1,000 persons heard Judge Thomas E. Troland of the Connecticut superior court deliver the principal address and watched Capt. Ralph H. Ghormley assume command of the 644-foot ship that was delivered to the Navy by the Quincy Shipbuilding division last month.

Mrs. Rebecca Fiske Schade, who sponsored the ship at its christening in Quincy on Sept. 7, 1967, witnessed the event with her husband, Adm. Arnold F. Schade, newly assigned U.S. Navy representative to the United Nations. Admiral Schade was commander of the Atlantic Fleet Submarine Force when he visited Quincy for Spear's christening.

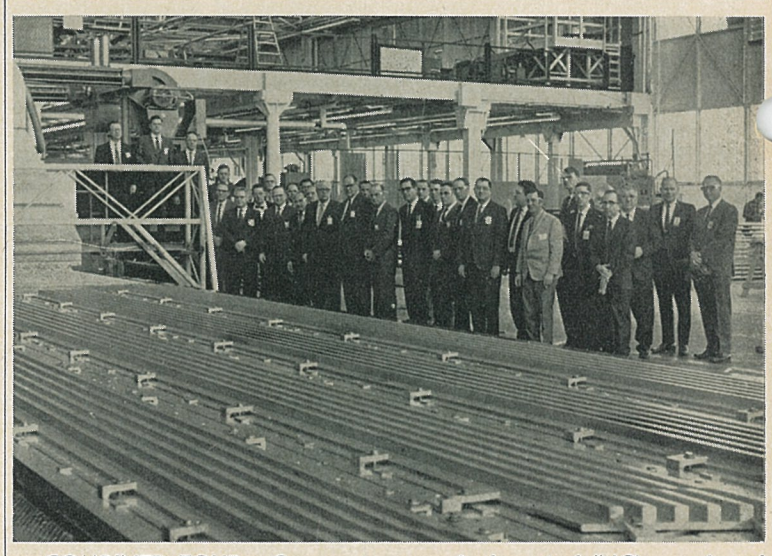
DAILY DOUBLE—To clear up apparent widespread confusion, here's side-by-side photo of Fort Worth division's G. C. Cherbonnier, left, Dept. 189-2, and C. L. Gaskamp, Dept. 89-1. "Hasn't a day gone by," Gaskamp said, "that someone hasn't gotten us mixed up." An easy way of identification? The badge.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

WILLIAM E. BRATTON (1969) from Pomona division to Convair division as assistant to president; **DAVID W. COWAN** (1969) from Convair to Stromberg DatagraphiX as professional placement representative; **FREDERICK M. PANNEK** (1963) from Convair to Fort Worth; **MICHAEL B. DOLPHIN** (1965) from Pomona to standards lab engineer, Convair; **JAMES MOORE** (1967) from Electric Boat to Quincy Shipbuilding as an accountant; **RICHARD HARTWIG** (1955) from Electric Boat to executive assistant, Fort Worth; **GEDIMINAS VILDZIUS** (1959) from Electric Boat to Quincy as senior industrial engineer; **RICHARD K. MECKLENBURG** (1966) from Convair to Electronics-SD as an engineer; **WILLIAM A. STEELE** (1967) from Pomona to manufacturing development engineer, Convair; **BRUCE RICHMOND** (1962) from Pomona to Quincy as field service representative; **HAROLD B. OTT** from Fort Worth to Convair as quality assurance specialist; **JOSEPH L. HARRISON** (1966) from Convair to senior contracts administrator, Electronics-SD; **DONALD T. GRIFFIN** (1950) from Convair to Quincy; **RICHARD H. McMANUS** (1940) from Electronics-SD to senior price estimator, Convair; **TERRY J. BENZING**, from Convair to DatagraphiX as manufacturing analyst; **STEVEN K. BOYD** from Convair to manufacturing analyst, DatagraphiX.



COMBINED TOUR—Corporate numerical control (NC) panel and quality control NC working group look over numerical controlled plank mill at Convair division's Lindbergh Field plant. Groups held individual and joint meetings early this month in San Diego. At left are Pete Terrault of Canadair, chairman of quality control NC group; W. R. Perkins of Canadair, NC panel chairman; and Roland Hagar of Convair, coordinator for host division.

Numerical Control Groups Review Mutual Problems

General Dynamics' interdivisional numerical control (NC) panel and quality control NC working group held both joint and separate working sessions March 2-4 at Convair division.

The two groups were welcomed by Lyman Josephs, Convair general manager, and discussed manufacturing and inspection procedures for NC parts to aid in solving common problems and achieving maximum economic utilization of available NC equipment and capabilities.

Detailed progress reviews on division and subsidiary NC activities and related quality control procedures were given at separate meetings.

Leo Sullivan of Electric Boat was elected chairman and Dennis Courtwright of Electronics-Rochester was elected secretary of the NC panel. Electric Boat will host the next meeting Aug. 20-21.

H. H. Hart of Fort Worth division was elected chairman and William Olson of Pomona, vice chairman, of the quality control NC group.

Members of the quality control group attending, in addition to Hart and Olson, were Pete Terrault, George Raymond, and Louis Carignan of Canadair; R. H. McCormick of Electric Boat; R. E. Peacock of Fort Worth; and Al Blakey of Convair.

NC panel members present, in addition to Sullivan and Courtwright, were W. R. Perkins, P. H. Kemp, Roger Dupuis, and Reinhart Kuntze of Canadair; R. I. Hagar, J. A. Gesiakowski, R. F. Schweitzer, and C. E. Taylor of Convair; J. P. Farniere and Robert Chapman of Electronics-Rochester; S. L. Walton, J. A. Shaddy, and I. F. Brown of Fort Worth; and L. F. Ahrens, F. L. Goodykoontz, and Vic Perez of Pomona.

Numerical control machines, inspection equipment, an automatic drafting machine, and computer graphics capabilities were demonstrated during a combined tour of Convair's Lindbergh Field plant. The NC panel also toured the Kearny Mesa plant while the quality control NC group toured Air Force Plant 19 facilities.

"It's bad enough to step off a moving bus, but did you have to shout 'One giant step for mankind?' "

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

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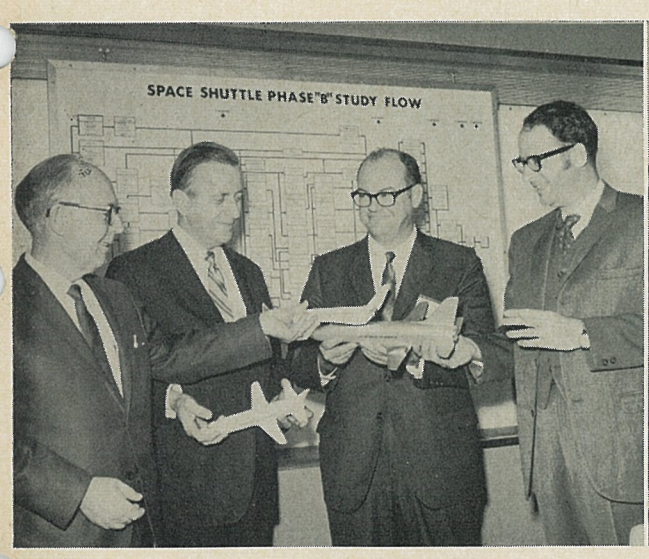
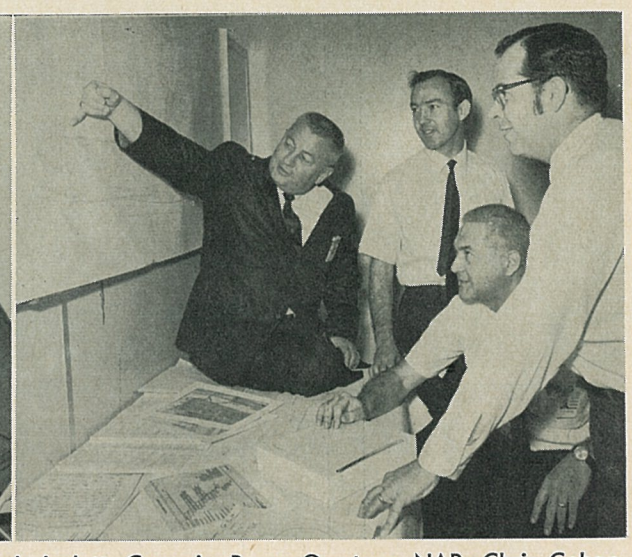




PROPOSAL ACTIVITY — Left is Convair - North American Rockwell inter-company management team discussing various shuttle configurations. From left, Charles Feltz, NAR, program vice president - orbiter; Bastion Hello, NAR, general manager for joint proposal; Dr. Donald Dooley, Convair, program vice president-booster; and John Sanford, project director-program development and plans. In photo at right are members of team working on joint proposal at NAR Downey plant. From left, Chet Osberg, Convair; Frank Jarlett, Convair; Bruce Gerstner, NAR; Chris Cohan, Convair. Center: Convair discusses shuttle with members of British Aircraft Corp. The two companies are exploring any common interests they may have in space shuttle activities. From left are Jerry Butsko, Dick Nau, R. F. Creasey, BAC, John Lowe, BAC, Davy Jones, Dr. Dooley, Walt Geudtner, Frank Dore, Dick Keehn, and Bob Lynch.

'Lights Out' Is the Word As Utility Bill Mounts

Convair's plant engineering department needs help in reducing utility bills that last year totaled more than $2¼ million — or more than $165 for each individual in each plant.

"We're not out to curtail use of needed utilities or hamper efficiency," R. D. Leonard, general supervisor of plant engineering, emphasized. "But we must stop waste and it's only through cooperation of individuals in each department that this can be accomplished."

Convair division's 1969 utility bills totaled $2,296,000 and included $1,845,000 for electricity, $182,000 for water, and $269,000 for gas (including utilities also used by Electronics-SD).

More than 65 per cent of the electrical bill is due to the more than 100,000 electrical lights being used in buildings at LF, KM, and AF Plant 19.

Leonard figures more than 15 per cent of the lighting bill was wasted because of lights being left on after all employes have left work areas at end of the work day. Another 10 per cent is wasted because lights are operating in areas not in use.

"This is the area of utility waste that is easiest for the individual to see and do something about," Leonard commented. "We don't leave lights burning needlessly at home and we should have the same concern for reducing utility costs where we work."

Plant engineering asks each individual to familiarize himself with light switches for his work area — and to turn them off when the area is vacated.

Gas is used by the division both for steam heating and refrigeration of buildings. Gas waste from doors or windows being left open while heating and air conditioning units are in operation is "conservatively estimated" at $50,000 a year.

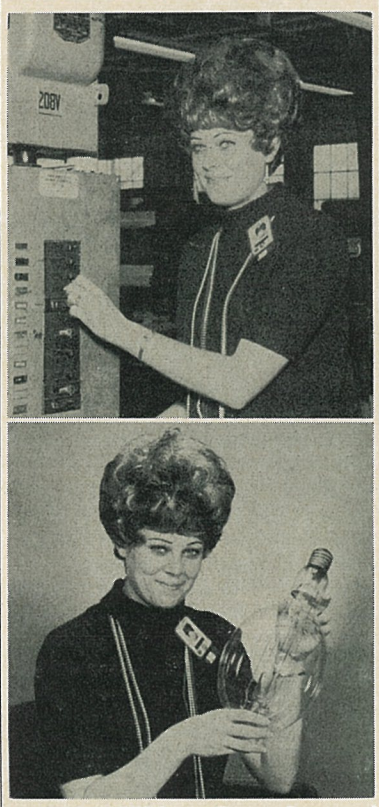
Supervisors in processing and other areas where large quantities of water are used are being contacted and asked to see that water lines are not left open needlessly. Employes are asked to report leaky faucets, hoses, and other sources of water waste.

Leonard said sources of compressed air loss should be reported to maintenance and that leaky hoses should be turned in to tool services for repair. "Compressed air should never be used for floor cleaning or personal cooling both because of the cost and because of the safety hazard," he said.

Virgil Siebert and Joe Dragonetti, Dept. 250-2 construction engineers, have been surveying division buildings and working with departmental supervisors to help identify areas of utility waste.

"Plant engineering supervisors welcome formal employe suggestion and cost reduction proposals or phone calls from individuals with ideas on how the division can reduce utility costs," Leonard said.

"We are a service department and will do all we can — but we need assistance from everyone."



REMEMBER? — Gwen Ramstad of Dept. 059-7 reminds Convair people to switch off lights when work areas are vacated. More than 1,000 big 1,000-watt lamps like one shown in lower photo are used in Bldg. 5 at KM alone. One such lamp can use — or waste — $100 in electricity a year.

Refurbished Missile Used in ABRES Shot

Atlas 28F was successfully launched from Vandenberg AFB March 13 in the Air Force Advanced Ballistic Re-entry System (ABRES) program. The missile was manufactured in 1962 and had been part of the strategic missile force until 1965. In 1968 it was refurbished for the ABRES mission.

Lewis, Rockwell Pledge All-Out Shuttle Support

The total corporate resources of General Dynamics and North American Rockwell have been pledged in support of the space shuttle project.

Roger Lewis, president of General Dynamics, said the project "will have top priority," and added that Convair "will have access to the total resources of the Corporation as may be required."

W. F. Rockwell, chairman of the board of North American Rockwell, said "I also proffer my personal committment that the diversified resources of the corporation are being and will continue to be devoted to the accomplishment of the space shuttle program."

Both made the statements in letters to the chairman of the

(Continued on Page 6)

Shuttle Proposal Delivered to NASA

The Convair - North American Rockwell space shuttle program definition study proposal has been submitted to NASA.

The unique feature and strong point of the proposal is the team management arrangement, according to Dr. Donald Dooley, vice president - space programs and space shuttle program manager.

"There is a clean cut responsibility between Convair and North American Rockwell for the booster and orbiter," he said. In addition "we have strong support in integrated electronics from Honeywell and IBM and on maintenance from American Airlines."

NASA has indicated that clean cut responsibility for the orbiter and booster would be a particularly desirable feature of any proposal, Dooley said.

The proposal, delivered on March 30, was hammered out by Convair - North American Rockwell teams at North American's Downey plant. Top level "red teams" were established to conduct minute reviews of the proposal before it was submitted to NASA.

On the "red teams" for Convair were Dick Adams and Cliff Adcock for the technical side, R. C. "Sparky" Sebold and George Putness for management and Davy Jones, George Villa, and Herb Smith for marketing.

In addition, a steering committee was formed consisting of program managers from Convair, North American Rockwell, IBM, and Honeywell.

The 250-page document gives detailed plans on how the Convair - NAR team will "define a low-cost, economical space transportation system for which the operational costs and development costs are approximately balanced to minimize total program cost."

The submitted proposal is broken down into six sections and a summary. Sections include configuration; study approach; technical experience/capability and personnel; organization and management; company capability and performance; resources and schedules.

(Continued on Page 6)

Convair, North American Form Inter-Company Shuttle Team

An inter-company management organization on the space shuttle proposal effort has been formed by Convair and North American Rockwell.

NAR's Space division is team leader and responsible for the orbiter and integration while Convair is responsible for the booster.

Bastion Hello, vice president of NAR's Space division, has been appointed general manager for the joint effort by the two companies.

Charles Feltz, NAR, was named program vice president for the orbiter stage.

Dr. Donald Dooley, Convair, was named program vice president for the booster stage.

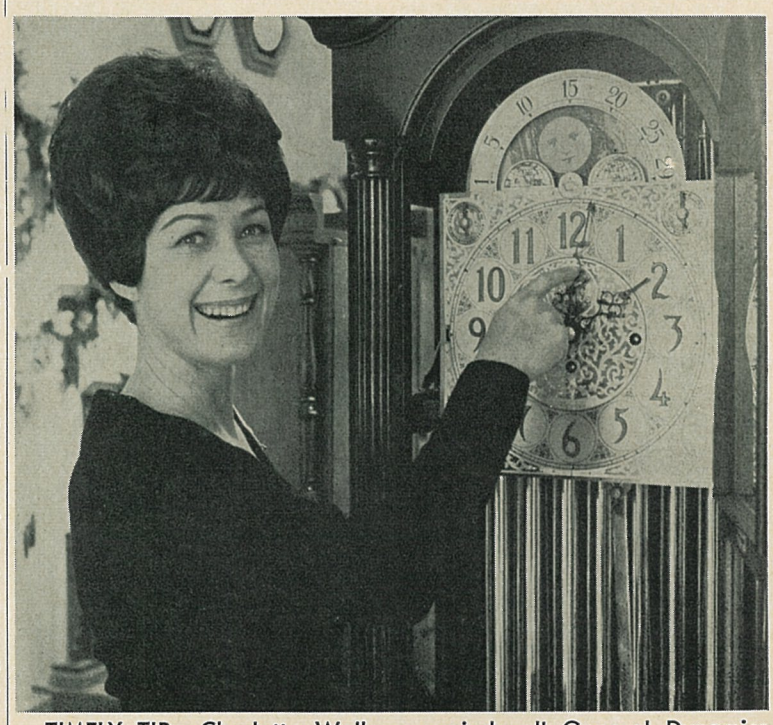
William Ezell, former chief program engineer for NAR's Saturn V second stage, becomes project director for program and systems integration. He is responsible for coordinating efforts on the orbiter and booster stages and for insuring the compatibility of the total system.

Frank Dore, who has headed government funded and Convair in-house space shuttle and shuttle related studies for 12 years, will work with Ezell as the senior Convair team member on program and system integration.

John Sanford of NAR becomes project director for program development and plans.

Dick Keehn, Convair, and Al Kehlet, NAR, will head the engineering effort for the space shuttle program.

To speed the flow of information between NAR's Downey plant and Convair, a closed circuit television system will be set up between the two plants for technical coordination on a daily basis and for special presentations.



TIMELY TIP—Charlotte Wallace reminds all General Dynamics people to set their clocks ahead an hour for time change at 2 a.m. April 26. You'll get "lost" hour back again Oct. 25.

Log Book Entries

SERVICE SYMBOL—Robert L. Williams, left, Convair Dept. 015 machine shop group foreman at AF Plant 19, receives 40-year service pin from Jack Bowers, division president. Williams joined the company March 17, 1930, as a milling machine operator and has held several tooling, fabrication, and machine shop supervisory positions during his four decades of service.

Service Emblems

CONVAIR

Service emblems due between March 16 and March 31.

Forty-year: Dept. 015, Robert L. Williams.

Thirty-year: Dept. 001, M. Chakarun, H. T. Edwards Jr., 027, H. E. Kropf, F. J. Serio; 031, W. G. Klingenberg, C. R. Myers; 059, L. M. Guess; 149, L. P. Sabat; 202, J. E. Mikol; 400, J. C. Chuckta, M. W. Lamb; 508, I. Olson; 511, J. R. Spurgeon; 656, J. B. Franklin; 761, J. F. D'Alesandro.

Twenty-five-year: Dept. 027, R. Casados, L. F. Pendarvis; 149, E. L. Whiteman.

Twenty-year: Dept. 131, N. E. Wallace; 142, H. E. Viachos; 149, C. L. Vineyard, Martha C. Woody; 193, Wilma B. Fowler; 250, G. E. Hope; 460, Marion P. Hess; 597, C. B. Wells; 761, B. W. Duke; 830, V. W. Way.

Fifteen-year: Dept. 015, R. D. Hampton; 142, R. E. Musterait, H. J. Quick; 250, R. Miranda; 507, C. G. Anderson; 517, J. M. Atkins; 524, Marguerite Bronson; 545, K. A. Morgan; 566, R. E. Banach; 592, K. C. Geyer; 744, J. A. Maillet; 780, Margaret A. Kelly; 832, Beulah S. Hamilton, Sue Ann McMillian.

Ten-year: Dept. 101, Marjorie C. Montanero; 131, Helen B. Cook; 148, Jean A. Danzl; 194, Mary Ann Silva; 202, Henrietta Whitt; 250, G. T. Funkhouser Jr., T. L. Gutierrez; Gertrude Kimble; J. D. Wheeler; 452, W. C. Brook; 515, D. C. Wark, S. Warniak; 524, Bette A. Gray; 566, B. Cazares Jr., C. W. Coleman; 731, D. W. Allen; 810, Priscilla C. Haynes; 832, Aurora D. Celiceo; 954, Colleen M. Woodrum; 979, S. Hupaylo.

ELECTRONICS

Service emblems due during the month of April.

Thirty-year: Dept. 422, H. W. Schuster.

Twenty-year: Dept. 427, J. Olar; 924, C. W. Teegarden.

Fifteen-year: Dept. 205, Magdalen V. Ferguson; 388, C. K. Rutledge; 712, R. O. Benson.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending March 13.

Dept. 027, R. P. Armenta, $15; 780, D. A. Campbell, $15; 250, C. J. Collins, $15; 966, C. C. Dickinson, $15; 149, D. V. Fox, $21.50; 130, M. H. Frink, $26.50; 059, O. H. Fritz, $15; 144, J. R. Frogge, $133.80; 001, R. D. Hudson, D. P. Martin, $7.50 each (joint award); 756, J. K. Linksay, $15; 019, F. Malcangio, $15; 507, E. V. Marikle Jr., $15; 027, J. J. Medina, $15; 027, J. Mejia, $34.80; 756, T. N. Moraga, $20.80.

Dept. 027, D. R. Noon, $88.90 (three awards); 059, F. J. O'Connor, $52.50; 250, H. E. O'Neil, $15; 027, $72.60 (two awards); 027, L. F. Pendarvis, $380.40; 027, V. Prado, $53.40; 979, N. M. Robinson, $161; 045, J. W. Romero, $52.50; 250, S. Salieri, $103.80; 027, F. J. Serio, $25; 250, J. E. Strachan, $51.20; 027, H. F. Thompson, $15; 027, L. H. Wilson, $15; 059, B. B. Woffinden, $271.40; 407, Wm. Wrieden Jr., $15.

Employe Suggestion awards approved for the week ending March 20.

Dept. 780, J. L. Barnes, $25.20; 250, M. S. Brown, $15; 780, J. M. Castro, $15; 454, R. A. Cook, $78.70; 046, C. K. Dusina, $139.10; 565, H. M. Harvey, $1,689.48; 059, B. E. Hawn, $140.80; 001, E. H. Hussong, C. B. Reid, $7.50 each (joint award); 507, V. M. Jorgensen, $15; 507, W. F. Lindquist, $192.20.

Dept. 731, C. R. Moon, R. L. Snider, $18.95 each (joint award); 831, R. M. Nicholas, $132.80; 027, D. R. Noon, $72.80 (two awards); 979, F. M. Russell, $20; 027, T. E. Simpson, $20; 019, J. M. Slatinsky, $15; 579, W. A. Smith, $61.10; 149, S. H. Wilson, $15; 954, E. T. Winn, $86.60; 595, R. G. Wright, $15.

Employe Suggestion awards approved for the week ending March 27.

Dept. 985, J. E. Allcorn, $34.80 (two awards); 566, A. E. Anderson, $147.70; 500, M. B. Bailey, $15; 401, H. W. Bishop, $30.60; 250, E. C. Black, $15; 149, M. Carson, $116.60; 001, A. J. Choo, $15; 835, R. Cordova, $15; 059, R. L. Dixon, $179.10; 142, R. A. Dominguez, $15; 250, L. E. Ford, $218.90; 250, W. Horn, $15; 401, J. Kelly, $15; 142, J. L. Koskinen, $15; 985, O. F. Martin, $15.

Dept. 148, S. C. McFarland, $15; 507, R. C. McLeod, $25; 195, D. D. Nicklaus, $41.40; 027, D. R. Noon, $24.80; 250, J. A. Posytan, $15; 027, A. F. Sanchez, $15; 460, H. R. Serr, $15; 985, R. J. Simon, $15; 985, J. R. Stevens, $124.60; 985, C. H. Towner, $90; 207, M. C. Tracy, $15; 407, L. Trentacosta, $30 (two awards); 574, J. W. Weaver, $29.80; 019, D. R. Wilson, $18.20; 027, L. H. Wilson, $34.40 (two awards); 518, R. J. Zenger Jr., $15.

Papers Presented

CONVAIR

ANDERSON—Robert T., Dept. 572. "Will Nondestructive Testing Really Help You and Your Company?" ASM Conference on Nondestructive Evaluation, Chicago, Ill., Feb. 12.

MAY—Luke C., Dept. 572. "Development of Quartz-Polyimide Processing for Advanced Radomes." Society of Plastics Industry, Washington, D.C., Feb. 3-6.

Papers presented at the AIAA Advanced Space Transportation Meeting, Cocoa Beach, Florida, Feb. 4-6.

LANFRANCO—Martin J., Dept. 583. "Wind Tunnel Investigation of the Separation Maneuver of Equal-Size Bodies."

LYNCH—R. A., Dept. 581. "The Design Evoluation of Reusable Space Transportation Vehicles."

PETERS—C. F., Dept. 952. "Stage Characteristics of an Orbit to Orbit Shuttle for Launch in an Earth to Orbit Shuttle Vehicle."

Papers presented at the American Society for Metals, Philadelphia, Pa., Feb. 25.

CHRISTIAN—J. L., Dept. 572, "Application of Aluminum-Boron to Space Structures."

FOREST—J. D., Dept. 512. "The Potential of Composite Design."

WEISINGER—M. D., Dept. 572. "Secondary Fabrication of Aluminum Boron Composites."

Invention Disclosures

CONVAIR

COOK—R. A., Dept. 454. Double surface Superfloc.

GINSKY—W. R., Dept. 584. Ammunition Cook-off Sensing and Prevention System.

GREEN—E. D., Dept. 491. Diffusion Molding.

HANNAY—P. M., Dept. 562. Rivet—Two Piece, High Endurance.

KRUMWEIDE—G. C., Dept. 988. Wire Bundle, Cable or Tubing Support System.

LUPENKO—A. P., Dept. 452, G. D. PEDDIE, Dept. 491. Light Weight Wave Guides.

MAYBERRY—D. W., Dept. 491. Solid State Linear Temperature Transducer.

McGREGOR—R. M., C. A. WRIGHT, Dept. 533. Control System Overload Declutch Unit.

RODEN—W. A., Dent. 491. Television Still Frames—Storage and Retrieval System.

YAGER—E. K., Dept. 507. Force Balance Transducer Employing Quantitized Feedback.

Rider-Driver

CONVAIR

RIDE WANTED — Desperate. From 39th & Meade to Lindbergh Field plant, 8 a.m.-4:45 p.m. shift. Phone Kay Knoff, ext. 671 LF or (home) 282-2743.

RIDE WANTED — From Figueroa Blvd., Pacific Beach, to Kearny Mesa plant, 7 a.m.-3:30 p.m. shift. Call E. L. Noah, ext. 3100 KM or (home) 272-2032.

Retirements

CONVAIR

BAILEY — Walter Jr., Dept. 203-1. Seniority date Nov. 14, 1950, retired March 6.

BEAVER — Edward L., Dept. 542-0. Seniority date Sept. 2, 1955, retired March 31.

CANTRELL—Franklin L., Dept. 002-0. Seniority date Oct. 11, 1946, retired March 31.

CATER—Elanora H., Dept. 196-0. Seniority date Feb. 20, 1961, retired March 31.

EATON—Hazel H., Dept. 016-0. Seniority date Jan. 14, 1952, retired March 23.

GOERNER—Frank J., Dept. 407-0. Seniority date March 7, 1952, retired March 27.

HAGEN—Milton C., Dept. 202-4. Seniority date Dec. 12, 1950, retired March 27.

HEATH—Milton A., Dept. 831-0. Seniority date March 2, 1956, retired March 13.

HOPMAN—John P., Dept. 130-8. Seniority date Sept. 26, 1935, retired March 31.

HULL—Albert G., Dept. 565-1. Seniority date July 16, 1965, retired March 27.

JAEGER — Walter H., Dept. 561-0. Seniority date Oct. 22, 1956, retired March 31.

LAIRD—Eugene V., Dept. 202-4. Seniority date Sept. 16, 1946, retired March 31.

LAWYER — James M., Dept. 563-0. Seniority date Aug. 26, 1941, retired March 13.

LINK—Everett M., Jr., Dept. 102-0. Seniority date June 29, 1959, retired March 13.

MERK—Joseph E., Dept. 761. Seniority date May 13, 1953, retired March 19.

PHILLIPS—Walter C., Dept. 131-1. Seniority date Aug. 8, 1955, retired March 31.

RITTWEGER—John D., Dept. 531-2. Seniority date July 13, 1953, retired March 13.

SACHRISON—Leonard O., Dept. 015-0. Seniority date Oct. 7, 1965, retired March 31.

SOPER—Howard K., Dept. 802. Seniority date July 17, 1961, retired March 27.

TOLPO—John W., Dept. 149-8. Seniority date June 20, 1940, retired March 19.

WAGNER—Howard E., Dept. 420-1. Seniority date April 17, 1950, retired March 31.

WILLIAMS—Glenn R., Dept. 401-0. Seniority date Aug. 25, 1965, retired March 20.

WILLIAMS—Robert G., Dept. 015-0. Seniority date Nov. 18, 1947, retired March 31.

WOODS—Gordon P., Dept. 964-2. Seniority date Sept. 18, 1956, retired Feb. 27.

YATES—Joseph W., Dept. 401-5. Seniority date June 18, 1953, retired March 31.

Personals

CONVAIR

Your kind expression of sympathy is deeply appreciated and gratefully acknowledged.

W. A. Carpenter,
Hazel and Robert McGee

* * *

A special thanks to the many Convair friends for their gifts, and kind farewell gestures, at my recent retirement.

J. W. Tolpo

* * *

I wish to thank our friends at Convair for the kind remembrance at the recent death of my husband.

Mrs. Walter Low

* * *

My sincere appreciation for all the cards and good wishes received on my recent retirement. I can never forget all my many good friends at Convair and will always treasure the associations formed over these past years.

John Hopman

* * *

We wish to acknowledge with sincere thanks the kind expression of your sympathy and are very grateful for all that you have done.

The Edward Nelson family

* * *

We want to extend our deepest and most sincere thanks for a most unforgettable retirement.

Evelyn and Wes Kellogg

Births

CONVAIR

PEDERSON—Daughter, Kristin Ann, 7 lbs. 11½ ozs., born March 24 to Steve (Dept. 583) and Kathy Pederson.

STARKER—Son, Richard Jr., 7 lbs. 7 ozs., born March 23 to Richard and Cindy Starker, Dept. 515.

Deaths

CONVAIR

AUTTERSON — Gordon, retired Dept. 215, Dec. 29, 1961, died March 13. Survived by his daughter Joanne.

BEHRENS — Warren H., Dept. 144, died March 2. Survivors include his wife, Barbara; daughter, Barbara Hodges; mother, Elizabeth; brother, Carl, and sister, Grace Skinner.

BERTACCHI—Premo G., retired Jan. 28, 1965, died March 10. Survived by his wife, Essie.

CARPENTER—Ora F., Dept. 402, died March 26. Survived by her husband, Wilbert, and sister, Hazel McGee.

HATCHETT — Cresswell, Dept. 541, died March 1. Survivors include his wife, Marian; daughter, Holly; sons, Gary and Clinton.

JEANCON—Wallace, Dept. 565, died March 21. Survivors include his wife, Margaret, and daughter, Mrs. Diane Hilden.

NELSON—Olga D., Dept. 780, died March 10. Survivors include her husband, Edward; daughter, Laurie; sons, Michael and Christopher.

OWENS—John E., retired Dept. 171, June 14, 1964, died March 16.

SAINT SING—Thomas G. Jr., Dept. 057-0, died March 31. Survivors include his wife, Johnnie I., daughters, Terasa and Patty, and son Tommy.

SOTO—Francisco E., retired April 30, 1960, Dept. 25, died March 20.

STINSON—Jack W., retired March 31, 1965, Dept. 250, died Feb. 1. Survivors include his son, Chris.

VERTS—James P., retired Nov. 25, 1963, Dept. 14, died Feb. 3.

Con-Trib Disburses $33,055 For March

The Convair Employes' Con-Trib-Club disbursed grants totaling $33,055 during the month of March.

The largest grant was $10,905 to the San Diego County Heart Association for the purchase of an electrocardiocorder, one one-millivolt calibrator, and one composite electrocardioscanner.

Other grants were: United Services, Inc., $4,000; City Rescue Mission, $4,000; Easter Seal Division of Childrens Health Center, $5,000; YMCA Sustaining Membership, $3,500; International Guiding Eyes, Inc., $3,500; Salvation Army-Door of Hope, $2,050; Community Mental Health Services, $100.

MAIL MONITORING — T. J. Donohue, left, acting deputy assistant postmaster general, discusses PROMPT System operation in monitoring of mail flow with Electronics-SD representatives E. J. Illes, director of marketing; Ken Morgan, program manager; J. V. Ravenis, technical director; and Seigfred Mikuteit, project engineer.

Advanced Electronic System To Monitor Mail Flow Tested

Preliminary testing of an advanced electronic system designed by Electronics-SD to gather information about the handling and movement of U.S. mail was conducted last month at San Diego's main post office.

Called PROMPT, an acronym for Program to Record Official Mail Point-to-Point Times, the investigative program, employing the latest space age electronic technology, is designed to monitor the flow of mails.

"Electronic letters," each containing a printed circuit card, are mailed in various mail classes in all types of containers, mixed with regular mail, and addressed to known destinations.

The electronic tracking equipment, placed at strategic locations in the main processing facility, establishes a record of mail flow. The equipment records the time it takes for test letters to be moved from deposit locations, and sorted and processed. The tracking equipment provides information that identifies potential bottlenecks and enables management to take effective corrective action to keep the mail flowing.

"The postal system this year will handle more than 84 billion pieces of mail," said Thomas Donohue, acting deputy assistant postmaster general. "Knowing the precise time it takes for letters to get through various steps in the mail handling process will help the Post Office Department to stabilize the mail flow and to plan more effective staffing of postal operations."

According to Donohue, who inspected the testing operations data generated by the PROMPT System in the future could be transmitted to a management center where the flow of mail would be controlled, thus speeding its delivery.

"Previous methods used to gather the needed statistical data," Donohue noted, "have either impeded the actual handling of mail or involved visual markings which tended to distort the validity of the data collected."

Dr. J. V. Ravenis, technical director for the PROMPT System for Electronics-SD, said the unique concept employed derived from Electronics-SD's work with intrusion detection devices but utilizes a passive (no attached power source) printed circuit that can be enclosed in any type of envelope or package.

ELECTRONIC LETTER — Dr. J. V. Ravenis, PROMPT System technical director for Electronics-SD, and Betsy Baker, an administrative secretary, illustrate how electronic circuit board can be mailed and used to check timing of its movement through various points in postal system.

A special transmitter at monitoring stations activates the printed circuit to create a signal that is recorded by a strip-chart recorder to pin-point time of passage.

Ken Morgan is PROMPT System program manager. Seigfred Mikuteit was project engineer for development of the system and Irv Brundige was electronic technician for the system development and test.

John Gehman, Gil Herlich, and Jim Nellis assisted with concepts and "hardware."

DRAWING DIVIDEND—Howard M. Harvey, an engineering drawing checker in Convair's Dept. 565-1, receives initial-payment $1,689.48 Employe Suggestion award check from R. E. Adams, vice president-research and engineering. Under Harvey's suggestion, "off-board" engineering drawings go to checking group without prior reproduction, distribution, and filing of prints. Harvey will receive additional award later after actual saving from ES for year is known.

General Dynamics News

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Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P. O. Box 1950, San Diego 92112.

TOP AWARD—E. Orrin Lee, third from right, of Stromberg-Carlson smiles broadly after receiving top Corporate engineering award from General Dynamics President Roger Lewis. At left are: Algie A. Hendrix, vice president; Dr. George E. Mueller, vice president, programs and development; and Dause L Bibby, president of Stromberg-Carlson. In center with Lewis and Lee is Sherman B. Weiner, Stromberg-Carlson vice president, research and engineering. At right are Edward H. Heinemann, vice president, special projects; and Adam Jorgensen, manager, S-C electronic switching.

Lewis Cites Importance Of Engineering Integrity

General Dynamics business is founded on good engineering, Roger Lewis, president, said during the presentation of the 1969 Corporate Engineering Achievement Award last month at New York Headquarters.

He presented a $1,000 honorarium to E. Orrin Lee, an engineering supervisor at Stromberg-Carlson.

"Good engineering," Lewis said, "means engineering integrity, and that integrity encompasses quality and creativity. It's important to our business and with it we will continue to move ahead."

The Engineering Achievement Award was begun by General Dynamics in 1969 to highlight engineering excellence during the year.

Lewis noted that selection of the overall Corporate award winner was particularly difficult because of the high quality of engineering represented at the company's various divisions and subsidaries.

Lee was cited for his work on the CROSSREED electronic private branch exchange, a new telephone switching system being marketed by Stromberg-Carlson. The 36-year-old engineer had a major role in developing the design approach for the system and personally introduced a unique approach to the system's common control. Eighteen patent applications have resulted from his design efforts.

Demonstration of 'Visual English' Impresses School Executives

Some 250 executives of schools for the deaf this month saw how deaf persons are using the telephone visually.

Pioneering work in "visual English" by the National Technical Institute for the Deaf (NTID) at Rochester Institute of Technology, using the Stromberg-Carlson VISTAPHONE picture telephone system, was demonstrated at a conference of executives of American schools for the deaf in St. Augustine, Fla.

Dr. D. Robert Frisina, a vice president of Rochester Institute of Technology and director of NTID, described the system that permits visual communication by means of lipreading and/or sign language and incorporates new features specifically for the deaf.

The system, developed by Stromberg-Carlson, has been in experimental operation at NTID since January. It is the first known telephone installation for the deaf.

A special dial telephone switching system, capable of handling video as well as voice signals, links six of these picture telephone units at NTID. Stromberg-Carlson engineers have succeeded in compressing the bandwidth of the video signal to permit transmission over ordinary telephone lines.

A four-station VISTAPHONE picture telephone system was installed at the Florida School for the Deaf and Blind, site of the April conference.

In addition to its use as a means of communicating between persons, the VISTAPHONE system can also serve as a computer terminal and as a receiver for special educational television programs.

Additional features are being designed by Stromberg-Carlson to adapt the VISTAPHONE system further for use by the deaf. One device can flash an incandescent light to visually indicate ringing. Other features will include visual dial and busy signals on the screen of each unit.

Stromberg-Carlson is currently conducting VISTAPHONE system product and market studies. These will include the use of the system by the deaf as well as by independent telephone companies, Stromberg - Carlson's principal customers.

NTID is the world's first large-scale endeavor to educate deaf students within a college environment in which most students are able to hear.

Air, Water Sampling Planned to Identify Degree of Pollution

Air and water sampling tests will be made at all General Dynamics divisions during the next six months.

Specialists from the Corporation's Bioenvironmental Health Control Center in Fort Worth will survey each of the divisions to identify existing or potential environmental pollution areas.

"These specialists will be selected from a four-man crew which is now undergoing specialized training," said Frank Paschal, administrator of the center.

Paschal said action will be taken where the survey findings indicate a need for action — or future checks or evaluations.

Algie A. Hendrix, Corporate vice president, is providing guidance for the program. Dr. John P. McCann, director of health, safety, security, and fire, is focal point for coordination.

Survey findings and recommended action will be issued as promptly as practical.

The Health Control Center was established at Fort Worth about six months ago. It is providing technical information, know-how, measurement and evaluation in areas of air, water, noise, and thermal-pollution control, occupational health and safety and all other facets of environmental hygiene.

Not Easy to Combat

Tension a Dangerous Byproduct Of Modern Life's Complexities

BY DR. A. DUNCAN MacDOUGALL*

(Following is another in a series of Corporate-sponsored articles, authored by General Dynamics physicians, dealing with subjects of general health.)

Tension — any kind of tension — is simply tigntness, the kind of tightness that comes from stretching. We produce tension in a length of wire by pulling it taut. If we pull too hard — give it too much tension, that is — it will break.

The same thing happens to people. People feel tension when they are pulled this way and that by strong forces like fear and desire and anxiety. If these forces are too much for people's resistance they break, just like a wire pulled too taut. And "breaking" may mean nervous breakdown, mental collapse, or in rare cases more serious medical disorders.

But people are not wires. Wires cannot recognize their tensions and do something about them; people can.

Tension is a growing problem. In the western world, particularly in the United States, human existence is becoming faster, more crowded and more confusing at a terrifying rate. It "has been permeated," as Dr. Jean Felton recently said, "by assaulting complexities that have dared man to find his work rewarding." I believe that by changing "work" to "life" we have an excellent summary of tension. It involves everyone — from babies striving to take their first steps to executives making far-reaching decisions.

Tension is easy to recognize in other people. We see obvious signals like jumping on a car horn the instant a traffic light changes or abusing store clerks. But in ourselves we often fail to see that if our bodies are in constant motion during waking hours, if we have trouble going to sleep, or what sleep we get is restless, so that we wake in the morning more tired than when we went to bed, we are probably tense.

Other signs are rapid pulse, lack of appetite, perspiring hands, tenseness of muscles, and headaches. Degrees of tension range from slight daily annoyances to extreme — and fortunately rare — cases of psychosis in which victims may hold themselves motionless for hours.

Man's health depends largely on the quality of his environment. The types of stress to which he must adjust vary with his environment, some stresses primarily affecting his physical health, others his mental health. Either type can produce both physical and mental symptoms, because our bodies and minds are tightly interrelated.

A person may be subject to tension both at home and at work. His job may involve meeting tight deadlines, difficulties with communications both up and down, criticism by his boss, and many other sources of stress. Resentment and fear arising from job conflicts can cause real physical pain—that "sinking feeling" in the lower abdomen — resulting from internal chemical and muscular changes. Other familiar responses are pulse speed-up, sweating, headache, lack of appetite, tremors, muscle weakness, sleepless nights and a general "let-down" feeling.

How can tension be relieved?

Unhappily there is no simple overall remedy. A problem arising from such varied causes has to be attacked from many directions. Some of the less complex tensions will respond to the "drug store" approach — pain relievers, tranquilizers, anti-spasmodics, and so on. But usually the mind as well as the body is involved, and this often means correction of long-time attitudes, thought habits, and living patterns.

Fortunately there are some ways in which we can lessen the harsh effects of a stressful life, even if we cannot do much about the sources of stress themselves. Here are some of the more effective ones:

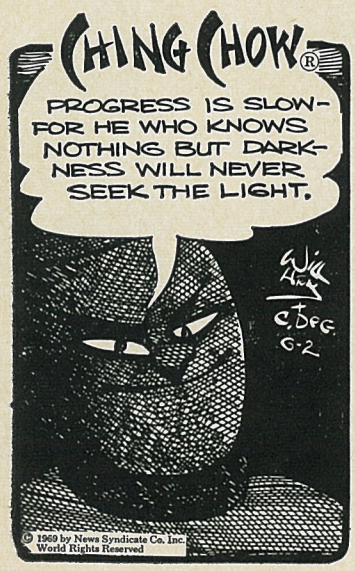
1. Proper diet and regular meals.
2. Extra sleep on weekends and holidays.
3. Schedules which avoid deadlines and overcrowding.
4. Work patterns which permit short periods of relaxation during the day.
5. Sufficient planning time for anticipated dates and social events.
6. Free use of vacation time, recreation and exercise — and a little self-indulgence.

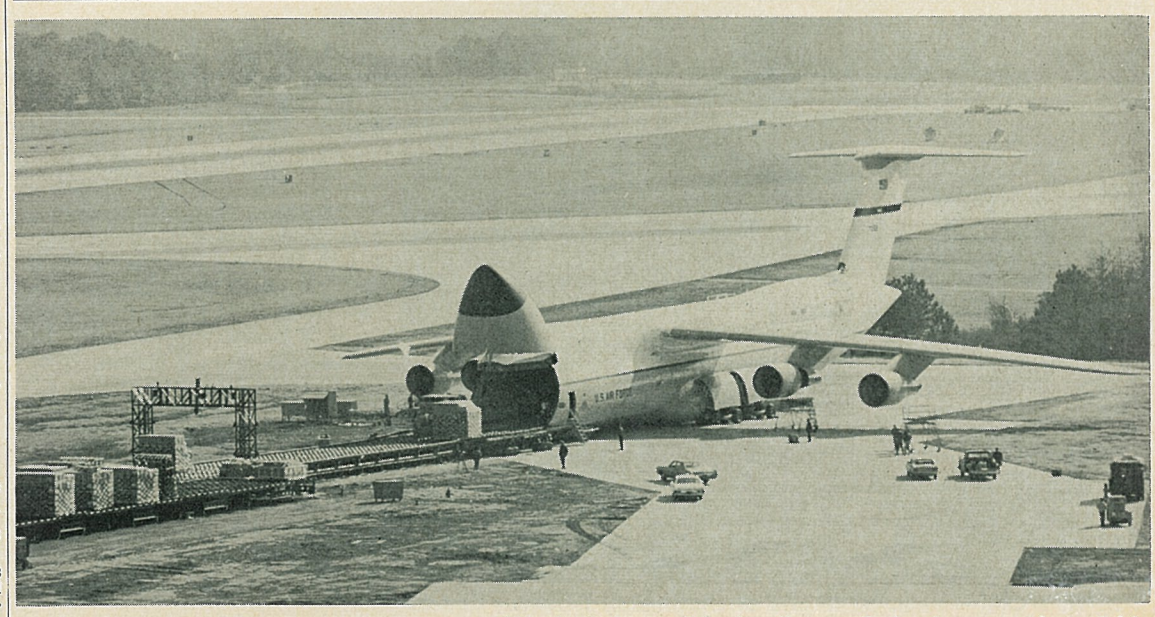
*Dr. MacDougall received both his A.B. and M.D. degrees from Cornell University and had residencies in surery and thoracic surgery in Connecticut. In addition to serving as medical director for Electric Boat division, he is director of health for the City of Groton, a Connecticut State Police surgeon, and senior attending surgeon at hospitals in New London.

Recruits Solicited For Peace Corps

The Peace Corps is conducting a special drive for skilled technical people. One of the local recruiters is a former General Dynamics man, Bob Merrilees, who has returned to San Diego after more than two-and-a-half years in Peru.

For information call Merrilees or his wife, Ena, at 582-3534.





DELIVERABLE DOCK—New air-transportable dock is used in loading palletized cargo aboard big C-5 Galaxy with Convair division-built empennage (tail section) in test at Lockheed-Georgia Co., Marietta, Ga. Dock can be delivered by C-5s to forward area and set up to handle arriving palletized cargo.

Savings of More Than Million Dollars Recorded by Buyers During Quarter

Thirteen buyers from Convair division material Dept. 820's outside production and work assist authorization function have been awarded departmental cost reduction achievement recognition certificates for savings totaling $1,187,400 during a three-month period.

RECOGNITION—R. N. Babcock, left, Convair manager of outside production, presents cost reduction achievement certificate to H.M. Sturdyvin. Others receiving awards, from left, were (front row) W. G. Kilgore, R. W. Herbst, H. W. Sass, and H. F. Warn; (back row) J. R. Johnston, W. L. Thompson, A. R. Hermann, L. J. Burnett, H. N. Brown, G. A. Axt, and G. T. Vargo.

H. M. Sturdyvin, a senior buyer, had highest credited saving of $547,400 from approved design and process changes and negotiated savings in parts procurement from vendor firms.

Sturdyvin also received a jeweled tie clasp for 10 years service with the company from R. N. Babcock, manager of outside production, and a second "gold star" award from Jack Hurt, DC-10 program manager, for suggesting an engineering design change that reduced number of forgings for a door fitting from four to one that will result in cost avoidance of $118,400.

Others receiving awards and their department-credited savings were G. T. Vargo, $51,600; G. A. Axt, $103,500; H. N. Brown, $94,200; L. J. Burnett, $29,700; S. J. Harding, $47,500; A. R. Hermann, $12,500; J. R. Johnston, $157,900; W. L. Thompson, $55,000; R. W. Herbst, $4,500; W. G. Kilgore, $4,600; H. W. Sass, $28,200, and H. F. Warn, $50,800.

Purchasing agents W. C. Buxton, G. W. Cowan, and W. S. Tucker took part in presentations.

Babcock pointed out the impact reduction in DOD spending is having on the aerospace industry and the division.

"We've got to show we can outperform all of our competition," he commented.

HIGH LEVEL—Jack L. Bowers, right, president of Convair division, discusses Cost Reduction program with three staff members after presenting them with personal Cost Reduction commendations for saving total of $238,800. Staff members directed study which resulted in reduced calibration and maintenance of special test equipment. From left, Bill Van Horn, director of operations; Russ Medlock, director of reliability control; John Milling, controller.

F-111 and DC-10 Parts Analyzed In Value Engineering Workshop

Forty Convair men recently spent mornings for two weeks studying and applying principles of value engineering to F-111 and DC-10 components in the division's first Value Engineering Workshop of the year.

Redesign and changes in manufacturing processes suggested by the eight five-man teams, if found acceptable and implemented, could save an estimated $938,000.

An illustrated presentation on each team's work was given at graduation ceremonies at Lindbergh Field.

Jack Hurt, Convair DC-10 program manager, was guest speaker and presented certificates of completion to the workshop participants. He said he hopes the changes suggested can be proven practical and can be implemented.

"The DC-10 program is a fertile field for the kind of innovation and ideas we have seen here today," Hurt commented. "The best way we can assure success of the DC-10 is to 'value engineer' the program to insure that we reduce costs."

Team 1 studied an F-111 stabilizer glove flap assembly and proposed substitution of two castings for seven parts that now are riveted together.

Members of Team 2 reviewed a DC-10 passenger door snubber mount assembly and, after an analysis of 17 different ways to stop a door, recommended a three-part assembly.

Team 3 analyzed an F-111 relay assembly and suggested replacing it with a printed circuit board with relays and diodes soldered to it. This could eliminate more than 200 parts.

Those on Team 4 suggested a new concept for a DC-10 door handle assembly that would reduce number of machined parts.

Team 5 studied a DC-10 nose gear door assembly and suggested replacing its stringers with polyurethane or honeycomb.

Members of Team 6 proposed a redesign and change in fabrication method for an F-111 armament pylon seal.

After study of an F-111 power panel terminal block, Team 7 suggested substituting a flat plate for the frame.

Team 8 members analyzed an F-111 torque tube pitch flap assembly and proposed substitution of an aluminum casting.

Everett Lindem, an educational specialist in Dept. 130-3, was instructor and coordinator for the workshop. Project leaders for workshop teams were W. R. Gordon of Dept. 059, J. S. Comber of Dept. 561, E. A. Zivolich of Dept. 561, and T. P. Emery of Dept. 400.

Members of the workshop teams were:
Team 1 — R. M. Buss, A. J. Fritz, A. R. Horsley, H. M. Romero, and R. W. Marx.
Team 2 — A. H. Christenson, V. L. Floore, J. M. Hazel, R. J. Kowalczyk, and A. T. Landry.
Team 3—R. E. Cloud, S. J. Harding, R. B. Riggan, J. T. Treat, and G. V. Reardon.
Team 4—B. W. Bracka, W. L. Carr, R. H. Stromberg, J. A. Wilkins, and F. F. Campbell.
Team 5—K. G. Flitner, M. D. McCutcheon, M. T. Raaberg, G. D. Reeves, and B. J. Griffin.
Team 6—C. L. Glasson, E. A. Collinge, C. L. Kiriakou, W. A. McGrew, and John Wasem.
Team 7—J. A. DeCosta, H. J. Minch, F. J. Quinten, Conrad Snyder, and W. H. Whitley.
Team 8—R. L. Brooks, T. P. Hard, R. S. Oberst, Sueo Tanabe, and S. J. Martin.

TEAM WORK—Members of one of eight teams in recent Convair division Value Engineering Workshop discuss ways F-111 power panel terminal block might be redesigned to reduce production cost. From left are J. A. DeCosta, H. J. Minch, F. J. Quinten, T. P. Emery (project leader), Conrad Snyder, and W. H. Whitley.

MRS. FYFFE NAMED WOMAN OF YEAR

Mrs. Rebecca Fyffe has been named Woman of the Year by the CRA Wives Club.

Mrs. Fyffe was presented with a silver plate at the March 18 meeting. Mrs. Lorraine Hudson was given the Outstanding Service Award, a silver bowl.

New club officers were installed at the April 15 meeting. They were Mrs. Helen Ellsworth, president; Mrs. Margaret Brock, 1st vice president; Mrs. Bea Costa, 2nd vice president; Mrs. Gladys Kobets, secretary; Mrs. Etta Weismantel, treasurer.

The club will hold a potluck luncheon at noon, April 22, at CRA Clubhouse.

Jeannine Letzring Heads Women's Golf

Jeannine Letzring has been elected president of the CRA Women's Golf Club for the coming year. Other officers are:

Joan Sjoblom, vice president; Irene Wilson, secretary; Nadine Prior, treasurer.

The club will play the following courses during the year:

May 9, Singing Hills; June 13, Mission Bay; July 11, Chula Vista Municipal; Aug. 8, Coronado; Sept. 12, Whispering Palms; Oct. 10, Balboa; Nov. 14, River Valley. The December course will be announced later.

For information call Freda Magargal, ext. 2933 KM.

Square Dancers Plan 'Tax Party'

Dynamic Eights, the CRA square dance club, will hold a "hard times" costume party from 8 to 10:30 p.m. tomorrow (April 16) in the CRA Clubhouse to depict "results" from income tax payments.

Clark Elliott will be caller. Refreshments will be served. Donation will be 50 cents each.

About 50 members of Convariety Steppers, Pomona division's square dance club, were guests of the Dynamic Eights for a barbecue beef dinner and dance April 4. This marked the 17th consecutive year for the two clubs to exchange visits.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

Buoy Moored Off Island For Sea Lanes Test Project

The Coast Guard cutter Walnut last week moored the Convair division-developed 40-foot-diameter composite-material buoy off San Clemente Island, 60 miles northwest of San Diego. It will be used in a sea lanes test program to be conducted by Convair for the National Buoy Development Project Office under Coast Guard contract (GD/NEWS, March 4).

Made of ferrous metal and special cement, the buoy will be used with four nine-foot-diameter Coast Guard aid-to-navigation (ATN) buoys in the program to evaluate their sea-keeping characteristics in deep open-ocean water.

With advent of high-performance surface craft and increasing off-shore marine traffic of all types, the Coast Guard forecasts the need for "lanes" similar to highway traffic lanes in the vicinity of major ports.

Cdr. Walt White, chief of the Coast Guard aid-to-navigation branch of the 11th Coast Guard District, said the sea lanes test program is designed to evaluate different mooring lines and methods for buoy mooring at depths to 20,000 feet. Maximum depth for traditional navigational buoy mooring is 300 feet.

Lt. Bill Lovern, skipper for the San Pedro-based Walnut, said a new device developed by crewmen on the cutter would be used in deploying the 3,450-foot 1½-inch mooring line for accurate positioning of the composite-materials buoy.

The line is a portion of that previously used 10 months in the North Pacific for mooring of ocean data station Bravo, a 40-foot steel-hulled buoy developed by Convair for the Office of Naval Research.

Convair representatives at a dock-side press conference April 14 prior to the composite-material buoy tow-away included W. T. Dorrance, director of special programs; D. G. Moody, assistant program manager for ocean data systems; R. V. Woodle, project manager for national data buoy systems; and Al Ender, project engineer for the sea lanes test program.

Woodle said the 50-ton composite-material buoy will be used in the open ocean for the first time in the sea lanes test program. The buoy was produced by Convair as an experiment to test new fabrication concepts and for performance and cost analysis.

Convair will service buoy instrumentation and operate test sites on San Clemente Island to obtain needed data for the sea lanes test program.

Inspection Grad Is Reassigned

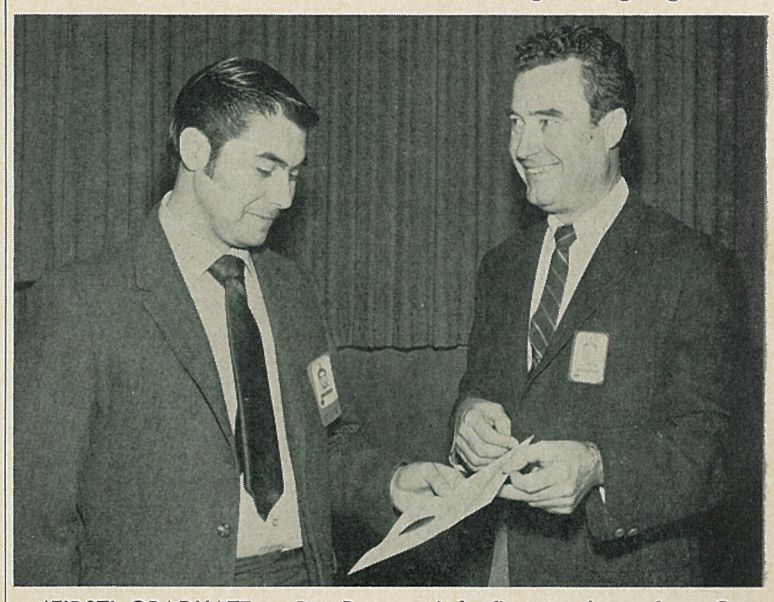
Pat Reaves recently became first graduate of Convair division's inspection apprenticeship program and has been assigned new duties as a quality assurance specialist in Dept. 143-3.

Reaves entered inspection apprenticeship in September, 1966, and because of credit for past experience, previous college studies, and overtime work was graduated from the four-year program in 3¼ years.

He had attended New Mexico Institute of Mining and Technology 1½ years, served four years in the Navy as an electronic technician, and attended San Diego City College before joining Convair.

During apprenticeship, Reaves earned an Associate in Arts degree from San Diego Evening College and had assignments in several mechanical and electronic inspection areas with the quality control department.

He now is a senior at San Diego State, working toward an electrical engineering degree.



'FIRST' GRADUATE — Pat Reaves, left, first graduate from Convair inspection apprenticeship program, receives journeyman certificate from L. I. Medlock, director of reliability control.

HOOP CHAMPS—Tool Control (top photo) won CRA fast-break basketball plant league championship. From left are (front row) Mert Ulrich, Antone Primas, Joe Bramante; (back row) Cliff Detty, John Stewart, Jim Cavender, and Jim Williams, tooling supervisor who accepted team trophy for department. Chuck Fowler, Louis Compton, and David Shine were not present. Plant 19 All Stars (lower photo) took slow-break league championship. Neil Van Buren, team "mascot' (kneeling), accepted team trophy for department. Players from left are (front row) Charles Sanford, Gilber Chavez, Luis Inzunza; (back row) Harry Van Buren Jr., Fred Todd, Thomas Munson, Byron Smith. John Fuller and Lynn Peterson were not present.

Tool Control, Plant 19 All Stars Take Plant Basketball Crowns

Tool Control and Plant 19 All Stars took CRA basketball fast-break and slow-break plant league championships, respectively, in recent playoff games.

Trophies for players on the championship teams were presented at an awards dinner April 3. Six teams had competed in each league.

Tool Control's squad, managed by Cliff Detty, won the fast-break crown by downing Aero twice — by 64-56 in a playoff game for second-half season win then 58-45 for the championship.

Detty poured 20 points through the hoop and Louis Compton 14 as Tool Control exhibited "good all around team play" in the championship tiff.

Plant 19 All Stars, managed by Gilbert Chavez, were undefeated in second-half play then came out on top 39-29 in the championship tilt with Underdogs.

In addition to player awards, team trophies were awarded departments represented by the winning squads.

Following are team standings for regular second-half season play:

FAST-BREAK

Team	Won	Lost
Tool Control	4	1
Aero	4	1
Underbrush	3	2
DatagraphiX	2	2
Cosmos Bums	1	3
Hot Shots	0	5

SLOW-BREAK

Team	Won	Lost
Plant 19 All Stars	5	0
Underdogs	4	1
Gasp	2	3
S.D. Mod Center	2	3
Net Jets	2	3
Reproducers	0	5

RETIRED EMPLOYE SINKS HOLE-IN-ONE

Robert Sage, a 70-year-old Convair division retiree, scored a hole-in-one on the 130-yard 17th hole at Sam Snead Tecolote course while golfing with his sons March 22. Sage retired from Convair in 1963 and has been golfing only the last three years.

CHESS CLUB CHOOSES ALTERNATE WEDNESDAYS

The CRA Chess Club will meet at 7 p.m. Wednesday, April 22 at CRA Clubhouse. Future meetings will be on alternate Wednesdays at the clubhouse.

Golf Tourney Set For DC-10 People

Second in a series of golf tournaments between Convair and Douglas DC-10 personnel is scheduled April 26 at San Carlos.

Prizes will be awarded to winners. First groups will tee off at 8:30 a.m. Terri Stutz, ext. 2145 LF, is taking reservations from Convair and San Diego-based Douglas people.

Weekend Gulf Outing Planned By Adventurers

CRA Adventurers has scheduled a car camp outing to Punta Estrella and Punta Diggs, a primitive beach area 17 miles south of San Felipe on the west side of the Gulf of California, April 25-26.

The group will leave San Diego at 2 a.m. April 25, cross the border at Calexico - Mexicali about 4:30 a.m., and leave San Felipe for the camp site about 8 a.m.

The area is ideal for sea shell collecting and individuals can hike out about a mile on the wet Gulf floor when the tide recedes. There are no facilities or drinking water at the camp location. Jorge Zorrilla and John Smaldino are trip coordinators.

* * *

Everett K. Ames has been elected chairman of the Adventurers Club for the coming year. Zorrilla is program chairman, Charlotte Newton is secretary-treasurer, and Tony van den Akker is trip chairman.

* * *

"Amazon River Scenes," a color slide show of a recent trip to South America, will be shown by Harry Rush, a design draftsman in Convair's Dept. 553-1, and his wife, Fran, at the Adventurers meeting at 7:30 tonight (April 15) in the CRA Clubhouse auditorium.

Highlights include visits to the Machu-Pichu and Iquitos ruins in Peru and to the headwaters of the Amazon and surrounding jungle. Side trips were made to Ecuador and Panama.

* * *

All "outdoor type" CRA clubs and interested General Dynamics people are being invited to attend an April 29 Adventurers meeting at which William Soldmann, M.D., of La Mesa will discuss field treatment of snakebites.

Two-Day Gem Show Slated

Convair Rockhounds will sponsor their sixth annual Gem and Mineral Show 10 a.m. - 10 p.m. Saturday, April 18 and 10 a.m. - 6 p.m. Sunday, April 19, at CRA Clubhouse. Admission is free.

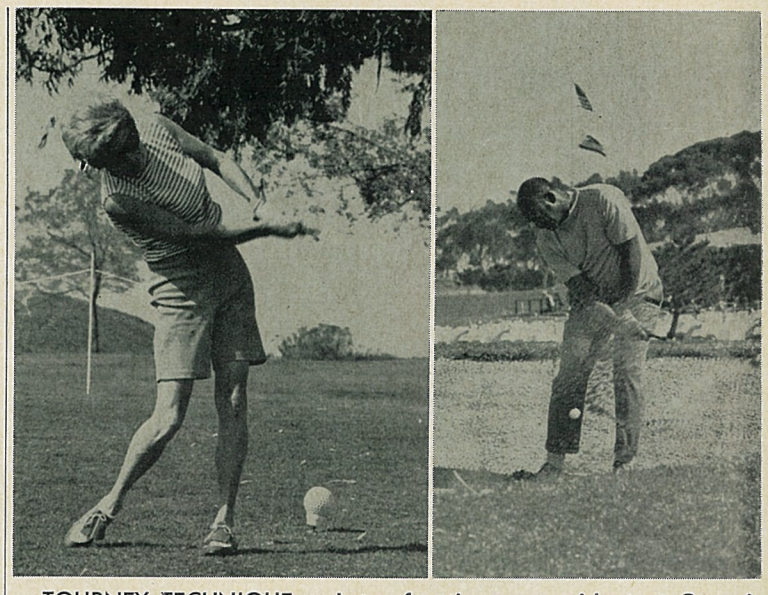
Club members will display their work including lapidary novelties, faceted precious stones, Indian artifacts, fossils, and jade carvings.

Among special exhibits will be an Australian opal collection, a working display of faceting, hand crafted gem stone butterflies, collectors items from Thailand.

A swap table will be set up for traders. Several dealers will be present with their lines of gemstones, cutting materials and specimens.

A snack bar will be open during the day.

EXHIBIT — Officers of CRA Rockhounds display one of exhibits which will be shown at sixth annual Gem and Mineral show. Head was carved by Ken Hurst, Dept. 142, from Utah alabaster. It took two years to complete. From left are Fred Baugh, club commissioner; Ken McCafferty, president; Jim Sugg, show chairman.



TOURNEY TECHNIQUE — Lots of action was evident at Convair Management Association's "Mickey Mouse" golf tournament March 27. Photos show Dorothy Johnston, left, teeing off and W. H. McIntosh blasting.

'Mickey Mouse' Golf Tournament Attracts 176 to Torrey Pines

A total of 176 General Dynamics golfers competed in Convair Management Association's 10th annual "Mickey Mouse" tournament March 27 at Torrey Pines.

Winners receiving gift certificates and their scores were:

Flight 1—Frank Kany, Dept. 400, 67; Frank Parker, Dept. 832, 68; Jim Robinson, Dept. 832, 69; Earl Carter, Dept. 015, 71, and Richard Schweitzer, Dept. 400, 71.

Flight 2—Gerry Nuss, Dept. 420, 67; Murray Edelstein, Dept. 574, 68; Dave Welkum, Dept. 598, 69; John Hooker, Dept. 403, 70; and Keith Alexander, Dept. 508, 71.

Flight 3 — Paul Morton, Dept. 195, 68; John Mellett, Dept. 113, 69; Lee Shipstead, Dept. 059, 70; Elmer Gauthier, Dept. 543, 70, and Bill Wolfe, Dept. 602, 71.

Flight 4 — J. Roslin, Pomona, 66; A. Grick, VAFB, 67; R. Gilligan, EAFB, 69; O. Simeon, Sycamore, 70, and J. Abels, Pomona, 71.

Flight 5 — Tom Johnston, Dept. 059, 61; Harold Easter, Dept. 059, 70; Carl Willems, Dept. 140, 71; Glen Sliger, Dept. 553, 71, and Marv Watling, Dept. 019, 72.

Winning golf balls for closest-to-pin on the eighth hole were Harold Wilson, Dept. 015; Ernie Ried, Dept. 250; Bill Scheck, Dept. 572, and Al Van Horne, Dept. 400.

Garden Club Plans Annual Rose Show

CRA Garden Club's annual Spring Rose Show has been scheduled April 26 in the Floral Building, Balboa Park, with the public to be admitted without charge from 1 to 6 p.m.

Entries from General Dynamics employes and family members will be accepted from 7 to 11 a.m. in single, three, and six-bloom arrangements, corsage, and children's divisions. Containers will be furnished and a special committee will assist with entries.

Lists of categories in each division are available at employe services outlets. Ribbons and merchandise awards will be presented to winners.

Phone Everett Henderson, ext. 424 LF or (home) 274-1754, for additional information.

Radio Club to Plan Replacing Equipment

The CRA Amateur Radio Club will elect officers for the coming club year at 7:30 p.m. Thursday, April 16, at the radio shack in CRA Clubhouse.

The club also will discuss facilities and consider replacement of obsolete equipment.

For information call Commissioner Alex Halyburton, ext. 1846 KM.

The club will provide radio services at the "Borrego Rough 100" off-road race April 18-19. Club members will man checkpoints with mobile equipment and provide emergency communications as necessary.

Volleyball Season Play Starts Tonight

CRA shop league volleyball season play gets underway tonight with eight teams competing in best-two-of-three-game contests at Municipal Gymnasium, Balboa Park.

Volleying begins at 7 p.m. as Reivers take on Engineers and Gasp tries to outlast Short Timers. Games starting at 8 will pit Armchair Bandits against Sheet Metal and 988 against Centaur.

Bicycle Club Plans 50-Mile Tour of City

The CRA Bicycle Club will take a 50-mile tour of San Diego beginning at 7:30 a.m. Saturday, April 25.

The riders will meet behind the organ pavillion in Balboa Park. Ride leader is Cy Campbell, ext. 1008 LF.

Bob Jenkins Heads Hi-Fi, Music Club

Robert H. Jenkins of Convair's Dept. 565-1 has been installed as president of the CRA Hi-Fi and Music Club. Ursula Garside is secretary and Bill Schart is treasurer. Other executive board members are H. D. Akers, Lewis Baum, C. L. Cozzens, and W. A. Roden.

Baum has been appointed organ club chairman; Cozzens, membership chairman; Dick Schmidt, program chairman; Ed Reid, publicity chairman; Joe Garside, library chairman; Roden, workshop chairman; Schart, studio chairman.

Next meeting of the club's organ group will be at 7 p.m., April 28 at the Glenn Peace home, 4204 42nd St.

Linkswomen Tie In March Tourney

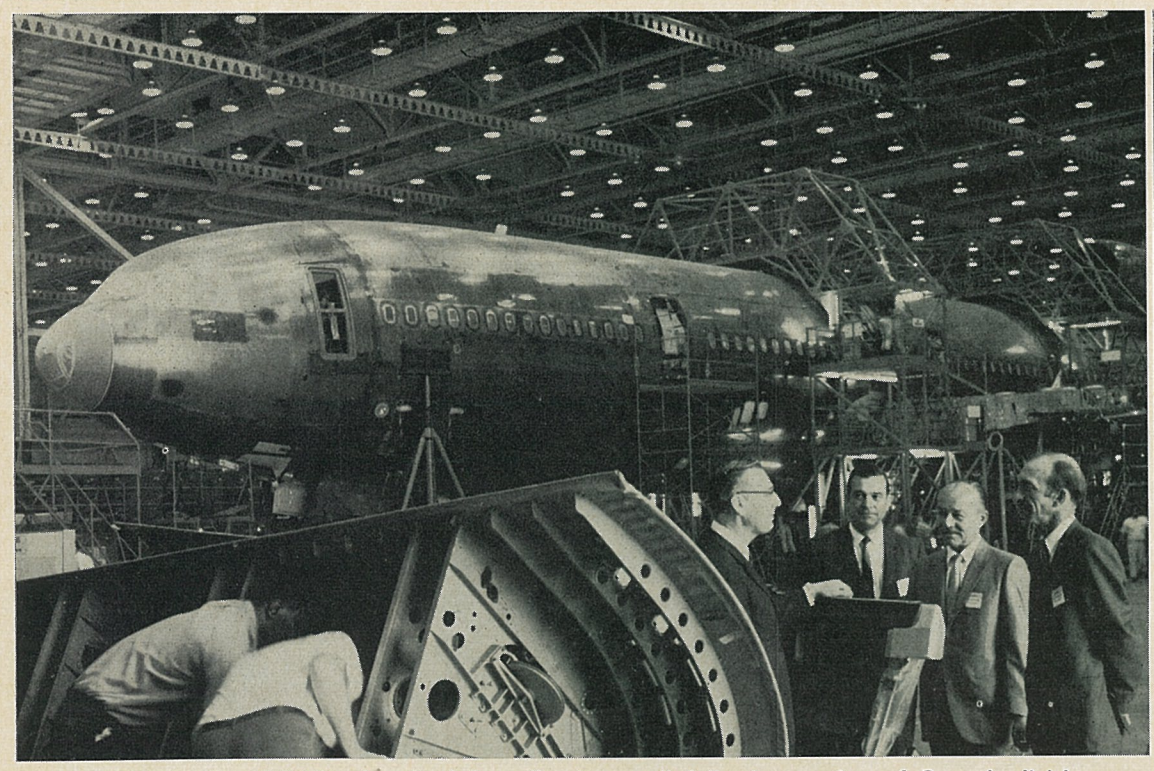
Sudden-death playoffs were required to determine winners in both A and B flights of the March 14 General Dynamics women's golf tournament at Whispering Palms.

May Dean Schell won the A flight title after she and Jeannine Letzring had tied with net 71s. Joan Sjoblom was B flight playoff winner after she and Nell Bartlett had recorded identical net 75 scores.

Softball Managers Meeting Scheduled

An organizational meeting for CRA plant league softball team managers has been scheduled at 7 p.m. tomorrow (April 16) in the CRA Clubhouse. Pete Beyrer, coordinator, said managers of both slow-pitch and fast-pitch teams should attend.

Team rosters will be due at a final pre-season managers' meeting April 30 and league play will begin the first or second week in May.



MILESTONE—First DC-10 takes final form (background) following mating of Convair division-produced fuselage sections at Douglas Aircraft Co. Long Beach plant. Discussing assembly status in right foreground with D. J. Krokus, left, DC-10 airline requirements director, are Convair division's James H. Mason, director of communication; William L. Van Horn, director of operations, and Jack B. Hurt, DC-10 program manager.

Shuttle Plan Sent to NASA

(Continued from Page 1)

The proposal will now be evaluated by a NASA Sourse Evaluation Board. The next milestone probably will be an oral examination of the team by the board.

NASA is expected to award two and possibly three Phase B contracts for a period of 11 months with an additional month for documentation and provisions for six one-month extensions if necessary.

According to NASA, the Phase B study will "have as its primary objective: (a) defining a space shuttle system, (b) accomplishing a preliminary design of the space shuttle (orbiter and booster) for both a high and low cross range capability, (c) obtaining an understanding of the scope, timing, and cost of the space shuttle system, and (d) obtaining an understanding of the supporting research and technology which must be accomplished."

Contracts are expected to be awarded sometime during June.

Mgt. Assn. Vote Deadline May 1

The Convair Management Association has announced nominees for office for the new club year.

Ballots have been mailed to all association members and should be returned to G. O. Withem, MZ 170-10 by May 1.

Nominees are:

President: Richard J. Archibald and Herbert B. Day.

Executive vice president: Charles B. Simmons and James A. DeMatteis.

Treasurer: Arden Honrud and Thomas W. Ochodnicky.

Financial secretary: Arturo Medrano and John W. Hanning.

Recording secretary: Doris M. Parker and Gerald E. Nuss.

Three-year director: James M. Adamson, Robert J. Ratliff, Arthur Wrightson, Roy V. Woodle, Lloyd G. Curtis and Ottoman C. Blake.

Two-year director: Terry Kell and Harvey E. Seibert.

Lewis and Rockwell Pledge Support

(Continued from Page 1)

NASA Source Evaluation Board. The letters were included as part of the team proposal.

Lewis said that "we believe that the cost of space transportation must be drastically reduced and that the development of reusable transportation is fundamental to this goal and to the nation's space effort."

Tri-Jetliner Roll Out Set For July, Flight in Sept.

Convair division-built fuselage sections for the first wide-bodied DC-10 tri-jetliner have been mated at Douglas' Long Beach plant and additional assembly operations are progressing rapidly in preparing the advanced-technology liner for roll out in July. First flight is scheduled Sept. 15.

Meanwhile, work on the second DC-10 is progressing with interior paneling, lighting, electrical circuitry, and other interior "finishing" being accomplished on its fuselage sections, which were delivered by Convair in February and March.

Convair is producing all the 180-foot-long and 20-foot-diameter fuselage except for the nose and tail sections.

The DC-10, called "the multi-market mainstay of the new jet age," will be produced in three basic models — the Series 10 for 300 to 3,250-nautical-mile routes, the Series 20 for 4,520-mile intercontinental range, and the Series 30 for non-stop 5,350-mile range. A convertible passenger-freighter Series 30-CF version also is being offered.

Its versatility of design makes the DC-10 capable of serving 90 per cent of the world's air travel market. The DC-10 will carry 270 passengers in mixed-class configuration or 345 in all-economy mode.

Dan Krokus, McDonnell Douglas director of DC-10 airline requirements, during a recent press conference for San Diego area news media representatives, said advanced engines on the DC-10 will enable it to operate at 25 per cent less cost per passenger mile than the DC-8 or 707.

Special sound proofing material in the engine pods will make the DC-10 quieter than current passenger jets and its engines have been designed to virtually eliminate smoke trails and other air pollutants. Krokus said the DC-10 will take off and land in shorter distances than the 727.

First three forward passenger doors of the DC-10 have been designed to "line up" with those of the 747 to simplify future airport logistics.

Eleven U. S. and overseas airlines have placed 204 orders and "firm options" for DC-10s. Lines included are American, Air Afrique, National, Northwest, Overseas National, Trans International, United, KLM, SAS, Swissair, and UTA.

Twenty four of the 51 skin panels going into Convair's portion of each DC-10 fuselage are fabricated at Convair and the other 27 are produced by Industrie Aerospaziali Meridionali (Aerfer) in Naples, Italy, under Convair subcontract. All then are assembled into fuselage sections at Convair's Lindbergh Field plant in San Diego.

The completed fuselage sections are flown to Long Beach in Aero Spacelines' giant Super Guppy cargo freighter.

The forward C/D section is 55 feet long and weighs about 15,000 pounds, the center E section which fits over the wing is 33 feet long and weighs about 8,900 pounds, and the aft F/G section is 39 feet long and weighs about 10,700 pounds.

Convair division has 2,750 personnel assigned to the DC-10 program. More than 26,000 detail tools are being used in production.

BANNER—New Convair Craftsmanship banner is displayed by Jackie Ridley, secretary to chairman of Craftsmanship Program. New feature is "Sustained Performance" to emphasize division goals. Fringes, border, and lettering have been changed from gold to blue. Banners will be given to division staff members who will present them on a quarterly basis to departments that have best Craftsmanship performance.

When telephoning, never mind the weather. Get to the point. Telephone time costs money.

Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, May 2. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. No canvas or open-toed shoes and no bare feet.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—I am told that prescriptions for diet medicines are not covered by group insurance, though lab fees and injections etc. for obesity are paid. Why not prescriptions?

A—Obesity arising "from within," such as hypothyroid condition, is considered an illness and is covered. However, obesity arising from overeating, etc., is not so considered. Group insurance does pay, however, for diagnosis to determine cause.

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Q—Is there any chance of replacing old vending machines with new ones that are not frequently out of order?

A—A program is under way to modernize machines and to date more that one-third have been replaced. Manufacturers have not been able to meet delivery schedules, however, but new machines are being put in operation as soon as available.

★ ★ ★

Q—Sandwiches served on lunch wagons at LF contain less meat for the same price as sandwiches served in the cafeteria. Why?

A—Cold packaged sandwiches are prepared in advance and should be uniform as to meat content. Hot sandwiches served in the cafeteria, however, differ both in quantiy and price.

★ ★ ★

Q—Those of us who do not have cars find it difficult or impossible to take advantage of the recreation facilities at CRA Clubhouse, Missile Park and Pine Crest. Buses do not run on weekends to KM and there is no public transportation to Pine Crest.

A—Contact the CRA supervisor, KM mail zone 131-70, ext. 1111, and efforts will be made to arrange transportation through the commissioner of the activities in which you are interested.

★ ★ ★

Q—Would it be possible for accumulated sick leave pay to be converted into the Savings and Stock Investment Plan instead of deposited as it is now?

A—No. The intent of sick leave pay is to provide readily available compensation for those suffering illnesses.

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Q—Why do industrial security guards carry guns?

A—Guards only carry guns when patrolling parking lots or at the Sycamore Test Site, when conceivably they might need a weapon for self-protection.

★ ★ ★

Q—Has the "ground effects" principle been considered as a possible replacement for aircraft landing gear?

A—Research in this area has progressed to the point of testing on a small plane, but before such a system could be considered seriously further study is necessary regarding feasibility for large planes.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is April 21. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS—Punta Estrella and Punta Diggs car camp outing, 2 a.m., April 25-26. Regular meeting tonight (April 15), 7:30 p.m.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BALLROOM DANCING — Instruction courses held Monday evenings.

BICYCLE CLUB—50-mile San Diego ride, April 25, meet organ pavillion, Balboa Park, 7:30 a.m.

BRIDGE — Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB—Meeting April 19, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CAMERA CLUB—Palm Springs field trip May 17.

CERAMICS — Meet Tuesdays and Thursdays, 9 a.m. - noon and 7-10 p.m.

CHESS — Play alternate Wednesdays. Next session April 22, 7 p.m.

CHORUS — Rehearsals Mondays, 7:30 p.m.

COUNTRY & WESTERN MUSIC — Meet Thursdays, 7:30 p.m.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB—Potluck, 6:30, meeting 7:30 p.m., April 21, Gillespie Field Clubhouse.

GARDEN CLUB—Spring Rose Show, April 26, 1-6 p.m., Floral Bldg., Balboa Park.

GOLF — Convair vs. Douglas DC-10 tournament April 26, San Carlos, tee off time 8:30 a.m.

HEALTH CLUB—Open 9:30 a.m. - 10 p.m. Monday through Thursday; 9:30 a.m. - 9 p.m. Fridays; 10 a.m. - 5 p.m. Saturdays: "Women only" weekdays, 9:30-11 a.m.

ICE SKATING—GD family stake night each Thursday, 6:15-7:45 p.m., House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1.00 (includes skates).

JUNIOR SCIENCE—Meeting April 17, 7:30 p.m.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Wednesday, 7 p.m., CRA Missile Park.

ORGAN CLUB—Meeting 7 p.m., April 28, Glenn Peace home, 4024 42nd St.

PISTOL CLUB—Shoot April 26, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB—Meeting April 16, 7:30 p.m. Borrego Rough 100 off road race, April 18-19.

RIDING CLUB — Gymkhana Horseshow, April 19.

RIFLE CLUB—Senior shoot, 7 p.m., April 22. Junior shoot, 9 a.m., April 18. Gillespie Field Range.

ROADRUNNERS — Meeting April 23, 7:30 p.m. Gillespie Field Clubhouse.

ROCKHOUNDS — Gem and Mineral Show, 10 a.m. - 10 p.m., April 18, 10 a.m. - 6 p.m., April 19.

ROLLER SKATING—GD family skate night, 6:30-9:30 p.m., April 20, Skateland, Front & G Sts. Tickets available at employe benefits, 5 cents.

SAILING CLUB—Meeting, 7:30 p.m., April 22.

SCULPTURE — Workshop sessions Mondays, 9:30-10:30 p.m.

SOFTBALL — Teams now forming. Managers meeting 7 p.m., April 16 and 30. Play starts in May.

SQUARE DANCE—"Hard times" costume party, 8-10:30 p.m., April 16. Dance Thursday, 8-10 p.m.

STAMP CLUB—Meeting 7 p.m., April 23.

SWIMMING—Family swim night April 18, 7-9 p.m., Mission Beach Plunge. Tickets at employe benefits outlets (5 cents).

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays, 10 a.m. to 4 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamics Toastmasters No. 457, Thursdays, 5:30 p.m.

TROPICAL FISH—Meeting and workshop 7:30 p.m., April 20.

WIVES CLUB—Potluck luncheon at noon, April 22.

WOMENS GOLF—Singing Hills tournament, May 9, tee off time 10 a.m.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

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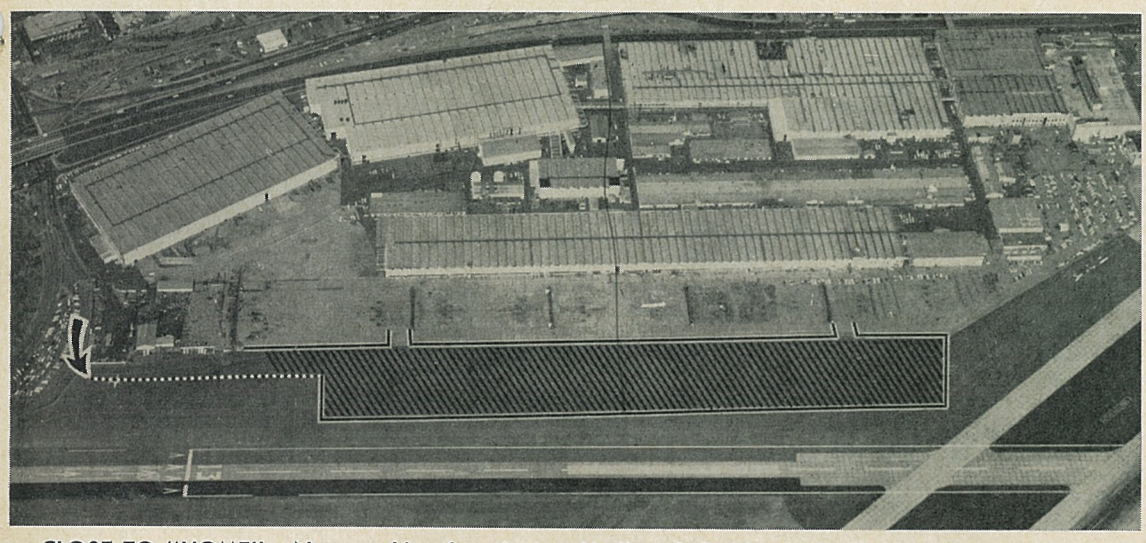


CLOSE TO "HOME"—New parking location at Lindbergh Field, which replaces Compass Rose lot, is shown by artist's lines. Entrance and exit are via Washington Street. Two pedestrian gates provide access to plant.

Shuttle Team Gives Report

Three Convair division representatives were at NASA Headquarters, along with North American Rockwell personnel, last Thursday for a three-hour presentation and a question-and-answer session with the space shuttle Source Evaluation Board in Washington, D.C.

They were Dr. Donald A. Dooley, vice president-space programs; Richard W. Keehn, assistant program manager-engineering; and Frank J. Dore, assistant program manager-North American Rockwell interface.

The Source Evaluation Board, composed of 18 key NASA and DOD representatives, will select the industry teams to be awarded one-year Phase B contracts in June for space shuttle definition and preliminary design studies.

Convair division is teamed in the space shuttle program with the North American Rockwell

(Continued on Page 2)

New Parking Lot Opens May 4 Near LF Bldg. 4

Employe parking will be improved by relocation of Lot 11 at the Lindbergh Field plant from Compass Rose to the west side of Bldg. 4 next Monday (May 4).

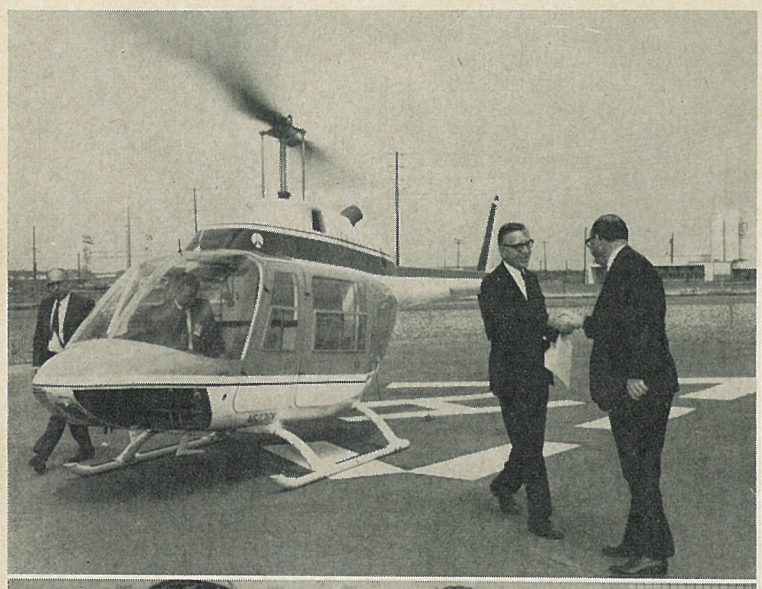
Paul Veal, manager of industrial relations at Lindbergh Field plant, said the new lot will have the same number of parking spaces as are now available at Compass Rose.

Those using the new parking area will drive west past Gate 5 on Washington Street extension, turn left at the end of the company fence, and follow the 30-foot-wide roadway to the parking lot entrance.

Stan Sharp, manager of industrial security, said two pedestrian security gates will open directly from the parking lot into the Lindbergh Field plant, adjacent to the north and south ends of Bldg. 4. The south gate will be open from 6 a.m. to 8 p.m. and the north gate from 6 to 8:15 a.m. and 3 to 5:15 p.m.

A cable fence is being erected along the north, west, and south boundaries of the new lot. Because of its proximity, bus service from the lot into the plant will be discontinued.

The new area, also designated Lot 11, will continue to be open to all employes with no permit required for parking.



SHUTTLE VISIT—Bastian "Buz" Hello, North American Rockwell vice president and general manager-space shuttle program, is greeted on arrival at Convair's Kearny Mesa plant (top photo) by Dr. Donald A. Dooley, Convair vice president-space programs. Leaving "chopper" at left is Charles Feltz, NAR vice president-orbiter program. In lower photo, Hello, left, and Dooley discuss proposed configuration of space shuttle booster and orbiter vehicles.

NASA Executive Returns to SD

Dr. John E. Naugle, NASA associate administrator for space science and applications and a former Convair senior staff scientist, returned to the Kearny Mesa plant April 16 for a look at his old lab area while in San Diego to address the Rotary Club on "The Practical Side of Space Exploration."

Naugle was with the former Convair scientific research lab three years before joining NASA in 1959 as head of the nuclear emulsion section at Goddard Space Flight Center.

Now, as head of Office of Space Science and Applications, he has jurisdiction over the Centaur program and all scientific satellite and other unmanned space programs.

During his visit, Naugle met with Lyman Josephs, division general manager, Dr. Donald Dooley, vice president-space programs, and Ken Newton, director-launch vehicle programs, for brief discussions on Centaur and future space shuttle earth-orbit, and orbit-to-orbit vehicles.

Walt Geudtner of Convair's space shuttle team and a former research lab colleague was host for the visit. H. Cushman Dow, division legal counsel, was chairman of the day for the Rotary Club meeting.

Naugle outlined some of the practical benefits for the average

(Continued on Page 4)

Groups Get $14,400 In Con-Trib Grants

Grants totaling $14,400 for five community service organizations were approved by the Convair Employes' Con-Trib Club members in its April 16 meeting.

Included was $3,000 for United Cerebral Palsy Foundation, $2,800 for San Diego County Citizens' Scholarship Foundation, $5,900 for the YMCA's Youth Lifeline program, $1,200 for Episcopal Community Center's Crisis Center, and $1,500 for Children in Need, Inc.

Lucky Fifty ES Suggesters To Eat Free

Fifty lucky Convair division people who submit Employe Suggestions during a five-week period beginning Friday (May 1) will receive a free lunch—in addition to the usual cash awards.

Ed Heller, manager of cost reduction and value control, said names of five first-time 1970 ES submitters and of five repeat suggesters will be drawn each week for five weeks.

(Continued on Page 2)

WANT TO WIN ONE? — Pat Thibodeau, Dept. 101-6 second-shift leadlady, shows one of gold-color meal tickets to be awarded in Convair Employe Suggestion program. Suggestions received May 1 through June 4 will be eligible for drawings.

CRA Missile Park Ready for Summer

CRA Missile Park is in full swing for summer with the miniature railroad, merry-go-round, and snack bar now open Saturdays and Sundays.

Hamburgers, hot dogs, beer, soft drinks, candy, snow cones, and charcoal and lighter fluid are available at the snack bar.

Departments wishing to organize departmental picnics have been asked to contact Pete Beyrer, ext. 1111 KM, to reserve a date and arrange for reduced-price ride and drink tickets.

Target Tracking Study Ordered

Electronics-SD has been awarded a study contract by the Navy to design a multiple target tracking instrumentation system (MTTIS) that will be used to evaluate pilot performance during flight.

The MTTIS will be capable of simultaneously tracking up to 16 high performance aircraft during simulated squadron attacks against sophisticated ground targets in a hostile environment.

Data from the MTTIS will allow Naval training personnel to rapidly evaluate each pilot's defensive maneuver performance and weapon delivery accuracy. Appraisal of performance in near real-time will enable the pilot to take corrective action on subsequent passes.

M. M. Cox, project leader, said the final study report will be submitted to the Navy in June.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

Q—The government is seeking techniques for using advanced materials and fabrication methods to provide low cost housing. Convair has the engineering talent to apply to this national problem. Could a small portion of our resources be applied to this critical need?

A—There are many critical needs today. In addition to low cost housing there are water and air pollution, urban transportation, education, waste management, law enforcement, air traffic etc. To devote a small portion of our resources to each is not likely to be useful. Our research supports directly a selective few of these and our research reports are available to government agencies and many, particularly in the materials area, are published in open periodicals.

★ ★ ★

Q—Did Convair establish an IRAD to cover each of the areas where we came in second in the S-3A evaluation?

A—In a general sense, yes. The S-3A is a rather specialized airplane and has problems unique to its mission. R&D in these areas would not contribute meaningfully to the broad technology base needed to support our present product line. Other than this, however, R&D work is being supported to strengthen our position in competition for future aircraft.

★ ★ ★

Q—What are the chances of getting a vending machine which sells hot tea in KM Bldg. 5?

A—Hot tea can be provided along with coffee in the coffee machines. Contact George Schmiedel, CRA supervisor, KM ext. 1111.

★ ★ ★

Q—Why do Reed's candies sell for 10 cents in our machines but retail for five cents and at some places six for a quarter?

A—The Reed's candies sold in Convair vending machines are a special package of considerably more weight than those found selling for less elsewhere. Also the larger packages are individually wrapped.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due during the month of April.

Thirty-year: Dept. 002, H. H. Frein; 027, R. M. Crise; 031, A. G. Johnson, A. J. Lux; 059, J. W. Hoerger; 143, T. A. Bessey; 149, T. W. Brotherton Jr.; 150, G. R. Jacob; 210, W. F. Jungk Jr.; 400, B. J. Berger, W. T. Grinsell Jr., F. E. Rockey, M. J. Schipper, S. E. Smith; 491, H. E. Kobrich; 508, G. V. Kobets; 566, S. C. Southerland.

Twenty-five-year; Dept. 002, J. R. McDonald Jr.; 027, A. J. Novello; 193, J. E. Reynolds; 202, H. A. Cowell, A. W. Pisarchik; 400, N. L. Smith; 451, R. R. Fargo; 517, H. L. Evans; 526, Martin W. McCreary; 565, Elsie P. Krauth; 833, Jewel L. Hilton; 860, E. W. McCamish.

Twenty-year: Dept. 015, Lois R. Gibbs; 059, Thea T. Austin; C. H. Fontaine, A. C. King; 101, Florence I. Millsap; 149, C. Hernandez, G. F. Marlor; 250, Robert Davis; 401, J. W. Hudson; 507, G. L. Droke; 511, L. M. Moore; 531, D. H. DeMarce; 566, W. I. Lane; 780, R. H. Steiger; 999, V. W. Dimpel.

Fifteen-year: Dept. 019, P. A. Piraino; 027, F. Chavez; 059, V. L. Floore; 142, R. G. Roscoe; 149, W. B. Dawson, R. Hull; 170, Eloise E. Dyer, Priscilla H. Willingham; 202, Phyllis W. Warner; 250, R. F. Bucy; 400, L. V. Harris; 401, J. M. Klimczyk, W. A. McGrew; 545, H. A. Brown; 551, L. Board; 561, H. W. Wegener, 565, J. J. Collins; 566, R. J. Wadginski; 578, J. D. Peterson; 731, E. E. McClure, R. W. Nelson; 759, J. Rizzo; 780, May Murray; 810, J. L. Scully; 840, Cathryn E. Walk; 954, P. R. Green; 962, C. J. Clark Jr.; 967, R. E. Cree; 988, H. D. Davis, R. P. Krause; 989, A. T. Wells.

Ten-year: Dept. 015, C. M. Ipox; 046, T. J. Evans, S. I. Rhyne; 101, Caroline R. Bonino, R. Bulick, Josephine M. Gandolfo; 130, Jennie E. Keaton; 131, G. H. Mowerr; 149, R. C. Miller; 150, Mollie M. Hashiguchi; 195, R. L. Smith; 202, J. F. Parker; 250, H. H. Emmel; 420, D. J. Dougherty; 460, J. A. Fournier; 491, A. B. Ellsworth; 515, G. Lang; 526, B. C. Dickinson; 543, J. R. Volper; 579, R. Niebrugge; 780, T. C. Hammond; 802, A. K. Pringle Jr.; 834, Goldie S. Raney; 835, J. L. Hilton; 840, Luella M. Powell; 989, D. W. Geyer.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending April 17.

Dept. 250, B. E. Ahring, $123.60 (two awards); 046, J. F. Batchelder, $15; 015, H. E. Beard, $30 (two awards); 831, R. D. Behlman, $15; 250, E. C. Cheney, $15; 454, R. A. Cook, $71.50; 985, H. E. Crabtree, H. J. Hastings, $57.90 each (joint award); 130, A. L. Dyer, $50; 810, R. C. Fildes, $19.30; 059, O. H. Fritz, $21.50; 191, D. J. Gibson, $312.70; 130, N. J. Green, $15.

Dept. $46, R. M. Gregoire, $37; 046, G. S. Ham, $15; 400, L. I. Harsin, $15; 020, R. F. Hatter Jr., $42.50; 454, R. A. Herrera, $18.30; 101, J. J. Howland, M. C. Montanero, $36.30; 250, E. G. Johnson, $15; 836, E. Klumpp, $15; 144, W. G. Lux, $549.20; 002, N. Moffett Jr., $15; 027, E. P. Osgood, $15; 250, T. R. Reid, $15; 985, E. L. Settlemyre, $25.70; 027, E. J. Woods, $15; 027, Yturralde, $75.

Employe Suggestion awards approved for the week ending April 10.

Dept. 027, R. P. Armenta, R. D. Hill, $8.90 each (joint award); 027, R. T. Arena, S. Lepule Jr., $35 each (joint award); 016, L. W. Barbour, $41.40; J. W. Blankenship, $15; 027, C. W. Burnham Jr., $15; 250, E. C. Cheney, $24.80; 985, R. L. Cockrum, $15; 149, R. M. Darling, $15; 020, G. N. Evans, $15; 515, H. C. Ferguson, 526, M. G. Walsh, $7.50 each (joint award).

Dept. 015, A. B. Guassac, $15; 015, W. A. Harris, $15; 531, B. L. Harritt, $15; 001, M. D. Herndon, $15; 565, J. J. Letzring, $15; 250, H. E. Minder, $15; 015, E. M. Moon, $15; 761, D. L. Myers, $44.70; 149, M. H. Nelson, $15.40; 143, T. J. Phillipp, $28; 584, D. C. Reda, $15; 130, M. J. Ruebel, $15; 780, E. C. Teague, $73; 149, H. R. Van Hoose, R. M. Darling, $7.50 each (joint award); 407, J. E. Williams, $15; 149, S. Witkoff, $49.30; 575, F. W. Wundrow, $232.20; 045, R. F. Yturralde, $15.

Employe Suggestion awards approved for the week ending April 3.

Dept. 979, B. J. Adams, $15; 019, L. S. Addie, $15; 027, R. P. Armenta, $15; 574, A. Aron, $33.10; 046, J. F. Batchelder, $39.10; 985, J. S. Bishop, $16.80; 149, L. E. Bramwell, $15; 733, N. Chaudoin, $15; 143, G. D. Clark, $15; 517, J. R. Clinger, $892.30; 250, C. J. Collins, $49.60; 574, J. H. Conway, R. V. Minutello, $7.50 each (joint award); 507, L. K. Denaco, $15; 836, C. D. Duncan, 020, G. N. Evans, $15; 149, M. E. Gallagher, $426.10; 979, L. W. Gardenour, $20; 979, W. B. Harrison, $15.

Dept. 524, N. M. Hicks, $15; 027, F. H. Kleckner, $15; 860, C. D. Knadle, $424; 250, C. J. Lewis Jr., $15; 015, W. G. Lewis, $15; 015, A. A. Lockwood, $15; 144, W. G. Lux, $129.30; 141, F. Mejia, $15; 780, T. W. Myers, $15; 027, D. R. Noon, $81.70; 584; R. L. Otwell, $15; 027, J. H. Parsons, $17.40; V. Prado, $17.40; 142, H. J. Quick, $15; 979, H. L. Snow, $67.80; 046, J. R. Stearns, $15; 149, G. H. Townsend, $15; 780, J. C. Walker, $15; 526, M. G. Walsh, $15; 810, B. J. Wilson, $81.10; 027, W. L. Worthington, $15.

Births

CONVAIR

HOWARD — Daughter, Diana Carol, born April 2, 9 lbs., 3 ozs., to Don (Dept. 001) and Jan Howard.

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Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P. O. Box 1950, San Diego 92112.

Papers Presented

CONVAIR

ANDERSON—R. T., Dept. 572, "Real-time enhancement, display and analysis of NDT data." Spring conference of the American Society of Nondestructive Testing, March 9.

LEONHARD—Karl E., Dept. 584, "Development of a thick insulation system for long term cryogenic storage." Thermodynamics & Thermophysics of Space Flight, Palo Alto, Calif., March 23-25.

NULTON—H. G. Jr., Dept. 145, "Safety wears many hats." Southern Safety Congress, Memphis, Tenn., March 1-2.

WEISINGER—M. D., Dept. 572, "Forming and machining of aluminum boron composites." American Society for Metals, Los Angeles, March 9-12.

Papers presented at the Operations Research Society of America, San Diego, March 20.

GROTE—R. S., Dept. 589, "Applications of mathematical techniques of queueing theory to analysis of aircraft availability.

NELSON—C. D., Dept. 589, "Systems analysis of large networks of ocean data stations."

Rider-Driver

CONVAIR

RIDE WANTED—Desperate. From 29th & Meade to Lindbergh Field plant, 8 a.m.-4:45 p.m. shift. Phone Kay Knoff, ext. 671 LF or (home) 282-2743.

RIDE WANTED — From 20th and A Sts. to Lindbergh Field plant, 7 a.m.-3:30 p.m. shift. Phone Tim Veall, 235-9942.

RIDE WANTED—From Linda Vista Road and Ulrich St. to Lindbergh Field plant, 7 a.m.-3:30 p.m. shift. Call Fred Standish, ext. 2287 LF, or (home) 278-7014. For duration of bus strike only.

Retirements

CONVAIR

ATKINSON—Alfred J., Dept. 015. Seniority date Feb. 6, 1961, retired April 10.

CRAWFORD—Mickey R., Dept. 733-0. Seniority date Aug. 8, 1956, reitred April 3.

DUNLAP—Wyatt H. Jr., Dept. 149-7. Senirioty date Aug. 1, 1947, retired April 17.

GOODPASTURE—Veree F., Dept. 578-1. Seniority date April 12, 1961, retired Feb. 7.

LATHRUM — Rolland S., Dept. 031. Seniority date Dec. 26, 1942, retired April 17.

LEVERETT—Samuel E., Dept. 840-0. Seniority date June 4, 1956, retired March 27.

PIPER—Floyd S., Dept. 142-1. Seniority date Sept. 13, 1954, retired April 17.

SALYER—John A., Dept. 250-2. Seniority date Oct. 30, 1955, retired March 20.

SCHNAUBELT—Franz J., Dept. 515-0. Seniority date Feb. 27, 1941, retired April 3.

Personals

CONVAIR

I wish to express my gratitude and thanks to the many friends at Convair who extended expressions of sympathy and thoughtfulness as a result of the loss of my wife, Leah.

Edward B. Freeman
Dept. 130-4

* * *

I wish to thank all our Convair friends for their kind remembrance on the death of my husband, Don.

Ann Cunningham & family

* * *

I wish to express my sincere appreciation to the many friends and co-workers for their kind expressions of sympathy and flowers on the death of my son, Thor Williams.

Mrs. Anna Hanson

Deaths

CONVAIR

DOW—Herbert H., Dept. 143-1, died April 5; survived by three sons, Bradley, Randall, and Russell.

SHAFFER—Leo W., Dept. 031-0, died April 19; survived by wife, Enid, and three daughters, Yvonne Pieters, Audrey Brittain, and Lucy Bennett.

WILLIAMS—Theodore E., Dept. 507-0, died March 27. Survivors include his mother, Anna Hanson and niece, Valarie Musial.

WYLIE—Norman I., Dept. 526-0, died April 2; survived by wife, Edna, and two daughters, Sharon and Linda.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

Lucky Fifty To Eat Free

(Continued from Page 1)

Gold-color meal tickets the winners will receive carry the following inscription:

"Your job is your meal ticket. Employe Suggestions are the ticket to Convair prosperity. Good for a meal of your choice at Kearny Mesa or Lindbergh Field employes' cafeteria or lunch wagon." Employes at AF Plant 19, Eastern Test Range, and Western Test Range also will be eligible.

Suggestions, to be eligible for the drawing, must meet requirements outlined on ES forms but do not have to be approved for the suggester to win.

Except for supervisors, all salaried and hourly employes are eligible to submit Employe Suggestions. More than one in every four submitted are approved—with the suggester receiving a cash award of 10 per cent of first year's savings from implementation of his ES. Maximum award is $5,000.

Increased employe participation in cost reduction programs by 20 per cent is one of the 1970 objectives established for Convair division by Jack L. Bowers, president. Heller said the meal ticket drawings provide an additional incentive to help meet the objective.

Last year Convair personnel received award checks totaling $123,699.97 for Employe Suggestions expected to save the division $1,185,747.70. Highest award checks were for $5,000 and lowest was $5 (a $15 award split among three employes for an implemented suggestion with intangible savings).

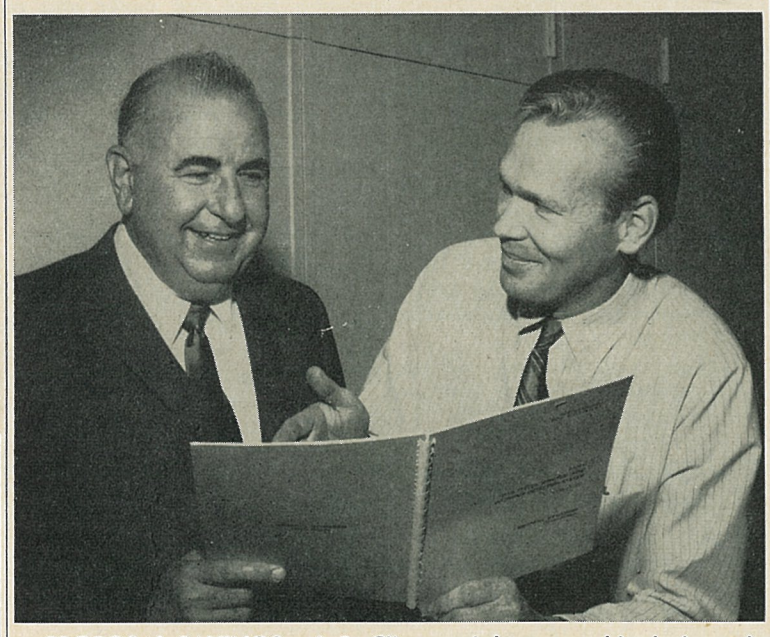
Awards for first quarter this year totaled $25,472.20 for ESs with first-year savings estimated at $261,311.00. Three employes received award checks for more than $1,000.

Heller said almost all ES cash awards are for common, everyday improvements that anyone could think of rather than from "strokes of genius." Many eliminate unnecessary paperwork, simplify planning, or result in tool or manufacturing process improvements.

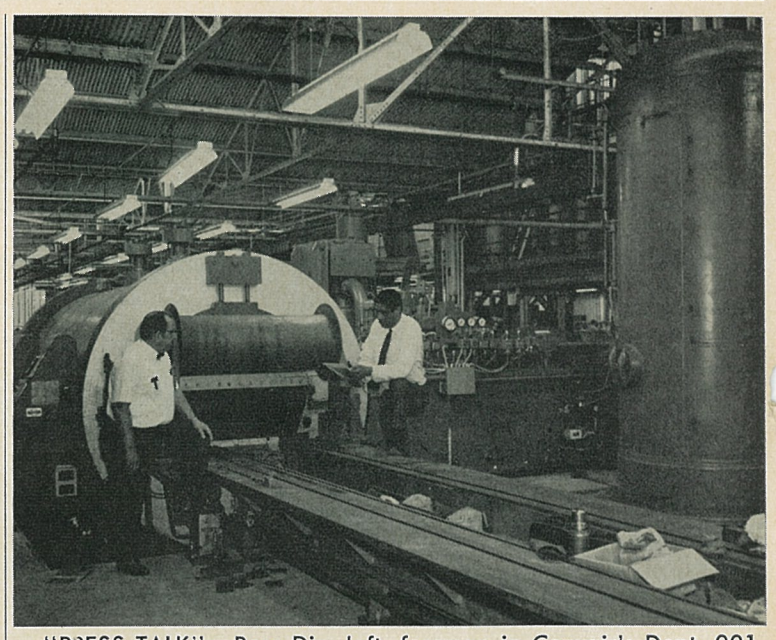
"Every eligible employe should participate in the Employe Suggestion program, both for his own benefit and that of the division," Heller commented. "A little effort can bring a return of up to $5,000 for each suggestion."

MASON WILL CHAIR BONDS COMMITTEE

James H. Mason, Convair communication director, has been appointed San Diego County Chairman for the Industrial Payroll Committee for the 1970 U. S. Savings Bond drive.



PROPOSAL SAVINGS—J. R. Clinger, right, a graphic designer in Convair's Dept. 517-0 at Kearny Mesa, discusses plans for using $892.30 Employe Suggestion award check with Paul Ferrara, director of administration and services for research and engineering department. Clinger earned award by suggesting that computer-generated cost data for use in proposals be printed as first carbon copy on plain stock for easy reproduction. Previous printouts on blue-banded stock required photographic processing before plates for printing were made.



"PRESS TALK"—Ross Dix, left, foreman in Convair's Dept. 001, and Bob Miranda, Dept. 250-2 project engineer, confer during installation of Verson-Wheelon press at LF. Oil pressure in internal rubber bladder will form sheet metal to exacting shapes.

Big Press With Rubber Bladder To Create Parts for Jetliner

A new 475,500-pound Verson-Wheelon hydraulic press, largest of its type manufactured in the United States, is being installed in Bldg. 1 at Convair division's Lindbergh Field plant for use in forming sheet metal parts for DC-10 tri-jetliner fuselages. It has a rated press capacity of 41,000 tons.

A rubber bladder in the top of the 160-ton steel pressure cylinder of the press is filled with 2,600 gallons of oil and pressurized to 10,000 pounds-per-square-inch (psi) to "wrap" sheet metal and other stock around dies or form blocks to the exact shape desired.

The press has two 50 x 164-inch tray tables, one at each end of the pressure cylinder, on which form blocks and stock to be formed are placed. One tray can be moved into the pressure cylinder and parts can be formed and removed in as little as 72 seconds.

While one forming cycle is under way in the pressure cylinder, the second tray table can be loaded for the next cycle. Eight separate motors operate the press and its hydraulic system.

Oil used in cylinder pressurization is stored in an adjacent tank. The oil can be pumped into the rubber bladder or removed from it by vacuum in 17 seconds.

Up to 5,000 psi can be created through hydraulic pumping of oil into the bladder. An intensifier then can be activated to increase pressure to 10,000 psi.

Bob Miranda, plant engineering Dept. 250-2 project engineer for the press procurement and installation, said a special railroad car was required to transport the pressurization cylinder to San Diego from Chicago, where it was manufactured by the Verson Allsteel Press Co.

Smith Crane and Rigging Co. moved the heavy press from the railway siding at the north end of the LF plant into its permanent location in a 30-inch-deep reinforced concrete pit in Bldg. 1.

The pressurization cylinder, heaviest single machine component ever installed at Convair, was moved over inch-thick steel plate for weight distribution to keep it from breaking through street and floor surfaces. A truck winch pulled the cylinder across three-inch steel pipe rollers over the plating before workmen with jacks and heavy timbers "inched" it into final position.

Dave Markovich, a Dept. 250-2 senior equipment engineer, said the new press is the fifth of its size to be produced. One of the others is being used by Canadair Ltd.

The new press cost about $820,000 and is scheduled to be ready for production use beginning May 11.

Henry A. "Hank" Mohr, group foreman for sheet metal Dept. 001, said a wide range of DC-10 sheet metal parts will be pressure-formed in the press.

"We will get much better forming from it than from any of our other presses," he commented. "It should almost eliminate the follow-up hand finishing usually required."

Ross Dix will be Dept. 001 foreman in charge of the press operation.

Miranda said the new press will have many advantages over smaller rubber-forming presses and standard punch and ram-type presses.

"Among them are lower tooling cost, faster tool fabrication, faster set-up time, shorter lead time in getting parts into production, and higher forming pressures," he said.

"Its design and large capacity will enable us to form larger parts or to form several small parts simultaneously."

General Dynamics is an Equal Opportunity employer.

Shuttle Team Gives Report

(Continued from Page 1)

(NAR) space division, American Airlines, Honeywell, and IBM—with Convair responsible for booster vehicle and NAR for orbital vehicle definition.

Each of four competing industry teams had one hour for an oral presentation to supplement its definition study proposal and two hours for answering questions from the SEB.

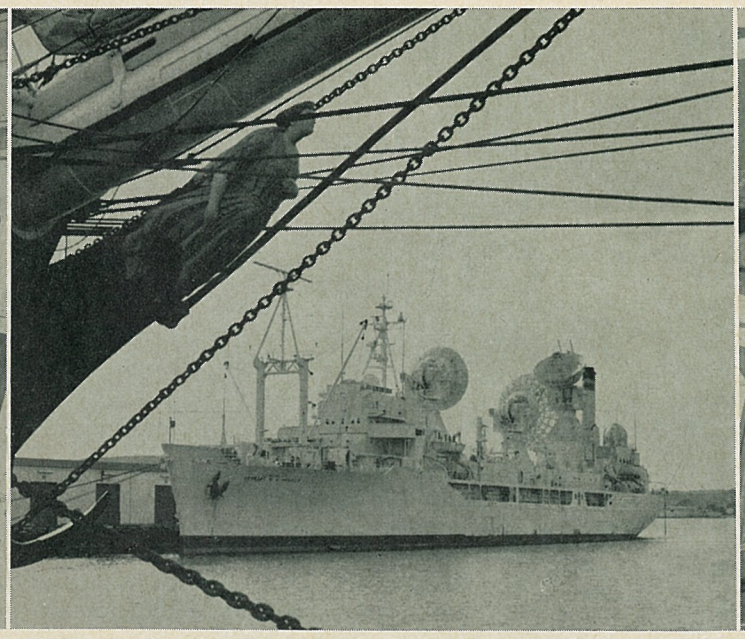
Helicopter service between Convair and the NAR plant in Downey was initiated last week when Bastian "Buz" Hello, NAR vice president and general manager-space shuttle, and Charles Feltz, vice president-orbital vehicle, flew to the Kearny Mesa plant for a five-part briefing on Convair space shuttle booster configuration design effort and related activities.

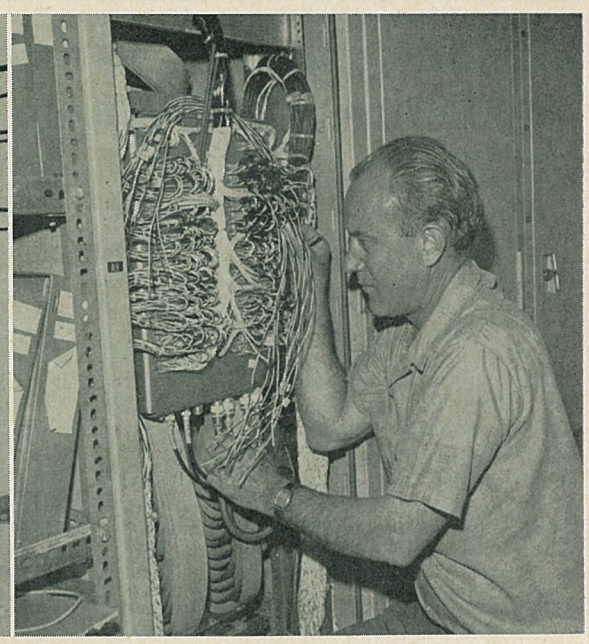
Dooley discussed space shuttle team objectives and Convair's work toward them and David J. "Davy" Jones summarized five related-technology study and hardware contracts which Convair has been awarded this year.

Keehn presented an overview of the space shuttle booster baseline design, F. W. Krohn gave details on the booster structural design and thermal-protection system, and Al Schuler described booster main propulsion, attitude control, and cross-engine systems.

Convair and NAR representatives met eight times during an eight day period in discussing and preparing data and briefing key personnel in preparation for the Source Evaluation Board exam in Washington.

Jones said proximity of the Convair and NAR plants—both with operational heliports—makes travel between the two organizations relatively easy. A closed-circuit TV system also will provide a direct link between space shuttle group control centers at the two facilities.





SHIP SYSTEM—Electronics-SD personnel are upgrading tracking capabilities of USNS Gen. H. H. Arnold by installing complex L-band radar system. At control console in left photo are Jacque Bournique, project engineer, and Darwin Rytting, seated, an associate engineer. Wiring input-output buffer interface between radars and computer system in photo at right is Leo Cusick, an electronics lab technician. Center: bowsprit and anchor chains of Star of India maritime museum ship frame USNS Arnold as it is tied up at Broadway Pier in San Diego. Large L-band antenna is to be installed on Arnold in future.

C-5 Will Sizzle This Summer In El Centro, Calif Heat Test

The world's largest aircraft has endured the cold weather—now for the hot.

Back at Wright - Patterson AFB, Ohio, after battling the elements during an Alaskan winter, a U.S. Air Force C-5 Galaxy will go to the other extreme this summer in hot weather tests at El Centro, Calif.

Built by Lockheed-Georgia Co., the C-5s' 65-foot high tail sections are manufactured by Convair division at San Diego.

During the Alaskan test program ground crews at times performed maintenance work at 35 degrees below zero. The airplane encountered outside air temperatures as low as minus 55 degrees during flights above the Arctic circle and over and around the North Pole.

Checking the Galaxy's stopping power on slick surfaces was part of the program at Eilson AFB. On a runway covered with loosely packed snow, the C-5 accelerated to 92 mph, then was brought to a stop in 2,790 feet. With the same slippery footing beneath the Galaxy's 28 wheels, 180-degree turns were executed in a 162-foot diameter.

And, as it has at other bases at a low gross weight, the Galaxy in Alaska came to a full stop after a landing roll estimated at no more than 1,200 feet.

The airplane used for the tests was the fifth off the Lockheed-Georgia line. Sister ships at Marietta, Ga.; Altus AFB, Okla.; Pope AFB, N.C.; and Edwards AFB, Calif., continue to build up flying hours in aerial tests and Military Airlift Command crew training.

Twice the size of today's largest military jet cargo plane—the C-141 Star-Lifter—the C-5 will be able to carry more than 3½ times its payload.

A cargo compartment 19 feet wide, 13½ feet high, and 144 feet long including loadable ramps makes it the only airplane ever built that can carry virtually every item of an Army field division.

The upper deck has accommodations for 20 persons ahead of the wing, and 75 more in the aft troop compartment.

Navy Will Activate New Tartar Warship

Rommell (DDG-30), last of three Tartar guided missile destroyers built in this country for the Federal Republic of Germany is scheduled to be activated at Boston Naval Shipyard May 2.

The other two Tartar-armed destroyers were also built at Bath Iron Works. Lutjens (DDG-28) was activated in February, 1969 and the Molders (DDG-29) in September of last year.

Pomona division is producer of the sea-to-air Tartar missiles for the U.S. Navy.

VALUE ENGINEER OF YEAR NAMED

Q. R. Creasy, FW division value control coordinator, was named "Value Engineer of the Year" at the 1970 national Society of American Value Engineering Conference in Dallas April 13-16.

Q. R. Creasy

He earned the honor for his "hard work, effectiveness, enthusiasm and collective contribution to the development of value engineering and the advancement of SAVE."

Frank W. Davis, FW president, was a guest at the conference and received a special award.

C. W. Doyle, FW division cost reduction and value control administrator, was conference chairman. Other employes who helped stage the conference include Bob Churchill, John Jackson, and Bob Ellis.

Ralph I. Morris, Electronics division, spoke on "A Look at a Corporate Value Panel."

Canadair-Built VSTOL Continues Flight Test

First of three Canadair CX-84 aircraft ordered by the Canadian Armed Forces entered second phase of flight testing this month. The CX-84 is Canada's first military VSTOL aircraft.

Flight testing began in February when the CX-84 flew in the hover mode in high winds and low temperatures. Other test phasing of the aircraft included retraction tests and instrumentation completion.

Canadair's chief test pilot, Bill Longhurst, called the first hover flight "very satisfying in spite of the gusty wind conditions. From moment of lift-off to touchdown of the second landing, control response was good and ease of handling exceptional."

Similar in appearance to its forerunner, the CL-84, the military CX version is powered by an advanced Lycoming T-53 engine producing 7 per cent more power. Other improvements have been built into the control and propulsion systems to increase reliability and simplify maintenance.

Technology gained in the CL-84 (prototype) program, during which over 300 flights totaling nearly 150 flying hours were made involving over 150 transitions, paved the way for the CX-84.

The remaining CX-84s ordered by CAF for evaluation are nearing flight status.

Electronics-SD Provides Radar for Tracking Ship

Electronics-SD is outfitting the tracking ship USNS Gen. H. H. Arnold with an L-band radar system for precision identification and tracking of advanced re-entry and orbital space vehicles.

Cal Burns, program manager, said below-deck ranging, angle measuring, computer, operations, and control equipment for the system was installed while the Arnold was in San Diego recently.

A new 40-foot-dish antenna is to be tested at the antenna range at Convair's Kearny Mesa plant and will be installed along with other above-deck modifications when the Arnold returns to port.

A mobile transmitter for the antenna testing will be set up on Mt. Woodson, about 15 air miles from the antenna range. Joe Roberti is handling the antenna production and installation task.

Installation of similar tracking equipment on the Arnold's sister ship, the USNS Gen. Hoyt S. Vandenberg, was completed by Electronics-SD in 1968.

Burns said design, fabrication, integration, installation, and testing of the systems for the two ships is being accomplished over a period of several years under a $10 million contract from the Naval Air Systems Command.

Jacque Bournique is project engineer for work on the Arnold and designed operations control center modifications for the two ships. The operations control centers receive status input from the various ship instrumentation systems and provide coordination and control of the instrumentation complex during a mission.

George Goddard was project engineer for work on the Vandenberg. Installation tasks were handled by 30 Electronics-SD engineers and technicians while the Vandenberg was in Portland, Ore., and San Diego. Testing of the equipment was accomplished both while the ship was in port and at sea.

The Vandenberg and Arnold were converted from troop carriers and recommissioned in 1963 for their ARIS (Advanced Range Instrumentation Ships) roles. Now operated for the Air Force Eastern Test Range, the two 522-foot-long naval ships represent a combined investment of more than $130 million and augment other ships, aircraft, and land stations of the eastern and western test ranges for ocean-based data gathering on missiles and satellites.

Among duties of the two ships is tracking advanced re-entry vehicles launched down the Western Test Range by Convair-built Atlas launch vehicles in classified Air Force ABRES (Advanced Ballistic Re-Entry Systems) missions.

Tracking data gathered by the ships' radar systems is used in comparing missile and re-entry vehicle actual and planned trajectories; in evaluating missile guidance systems; and in measuring size, shape, and weight of re-entry vehicles and in determining their temperature, performance, and stability during re-entry and down-range flight through the atmosphere.

Electric Boat to Launch Billfish, Newest Nuclear Sub, on May 1

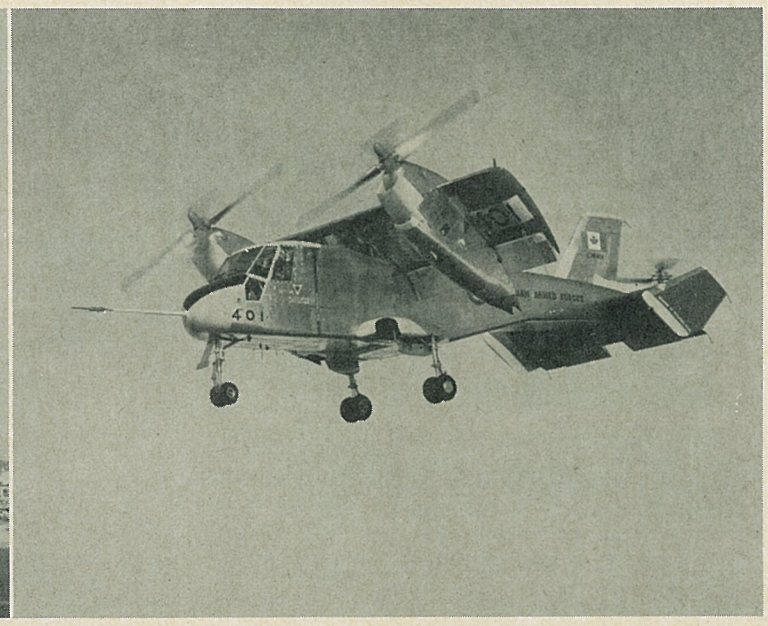
Gen. Earle G. Wheeler, USA, chairman of the Joint Chiefs of Staff, will be the principal speaker at the May 1 launching of the nuclear attack submarine Billfish (SSN 676) at Electric Boat division. General Wheeler's wife — the former Frances Rogers Howell, who grew up in Old Greenwich, Conn. — will sponsor the 292-foot submarine.

The ceremony will begin at 5 p.m., EDT, and will be the first afternoon launching at the shipyard since World War II. The ship is scheduled to slide into the Thames River at 5:30 p.m.

Gen. Wheeler began his military career with service in the District of Columbia National Guard. He graduated from the U.S. Military Academy in 1932, the same year of his marriage. During WWII, he was Chief of Staff of the 63rd Infantry Division which played an important role in breaking the Siegfried Line and contributing to the final defeat of Germany.

Billfish is the 27th submarine of the Sturgeon class. Named after a fleet-type submarine which achieved distinction in WWII action in the Pacific, Billfish will be the Navy's 96th nuclear submarine when she is delivered next year.

VERSATILE—Canadair-built CX-84 aircraft, capable of speedy forward flight and also of hovering, is under flight test in Canada.



Despite gusty wind conditions during first air trial, CX-84's "control response was good and ease of handling exceptional."

Electronics-SD Quality Engineer Receives ASQC Certification

Vito Sardo recently became the first Electronics-SD senior quality control engineer to receive quality engineer certification from the American Society for Quality Control through competitive examination.

He passed the exam after completing an eight-week refresher course, sponsored by the San Diego ASQC section, that covered statistics and probability, experimental designs, quality planning, inspection and testing, data processing, and metrology.

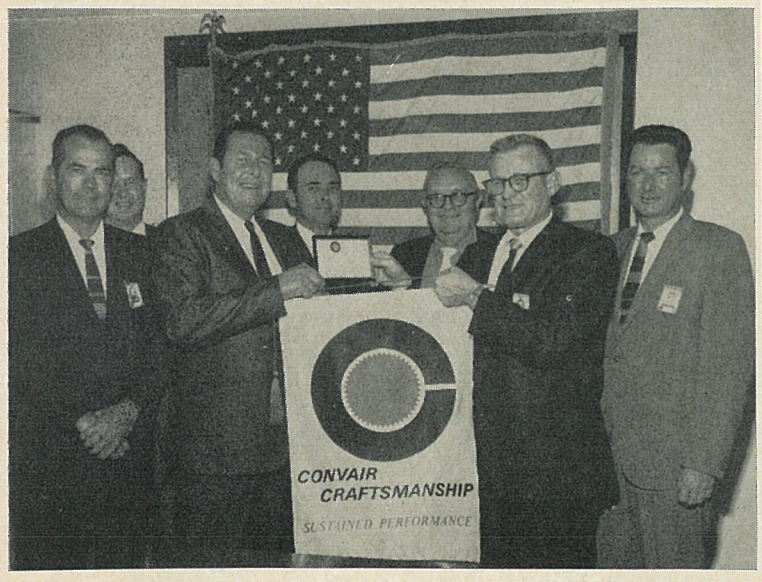
Five other Electronics-SD quality control engineers—J. E. Slean, J. R. Sheppard, D. Q. Stewart, G. E. Duplissey, and D. V. Hill—are enrolled in a similar course now being conducted under direction of W. T. Hollar of Convair, professional development chairman for the ASQC section. Instructors, all also from Convair, are Vern David, Bob Woodward, Chester Shaw, and Walt Gill.

Sardo has been with Electronics-SD two years and previously served 12 years with Convair division as a test technician, quality control engineer, and senior quality control engineer.

A native San Diegan, he holds an associate in arts degree in math-science from San Diego City College and is taking management systems courses through University of California Extension.

R. H. Nicholson, Electronics-SD manager of quality control, said all quality control engineers within his organization are bein encouraged to work toward ASQC certification as one means of upgrading their professional status

ASQC CERTIFIED—Vito Sardo, left, an Electronics-SD senior quality control engineer, shows Certified Quality Engineer certificate he has been awarded by American Society for Quality Control to R. H. Nicholson, manager of quality control. Certificate was presented at meeting of San Diego ASQC section.



REPEAT WINNERS — For sixth consecutive quarter, Sustained Craftsmanship Achievement award went to financial and program control employes of Convair's material department for "outstanding uniform high level performance attained and the realism recognized in setting goals." H. E. Moose, director of material, presents banner to J. M. "Duke" Rogers, manager of material financial and program control. Looking on are chiefs of material Dept. 860. Pictured, from left, Frank S. Brown, Russell F. Fox, Rogers, Robert B. Amick, A. L. "Doc" Deane, Moose, Ray H. Quinn.

Dynamics Sons and Daughters Collect 29 Awards at Fair

Sons and daughters of Convair employes won 29 awards at the 16th annual Greater San Diego Science Fair. Several received more than one award.

John Winslow, son of Mr. & Mrs. Verner Winslow (he's a design engineer in Dept. 566-2) won the senior division boys' sweepstakes for the second consecutive year—a feat never before accomplished in the fair's history.

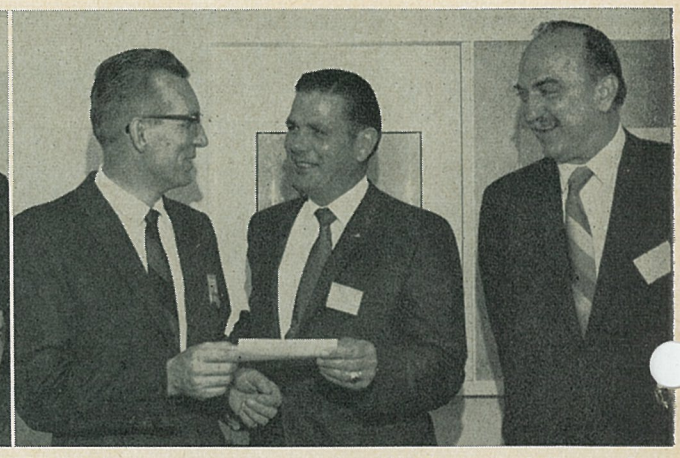
Winning the sweepstakes award qualifies John to enter his project on cancer research in the International Science Fair in Baltimore, Md., in May.

Other winners included Russell S. Babcock, Everett Boyer, Phyllis Brown, Randy Dorian, Glen A. Evans, Chuck Greene, Patti Harrison, Jeffrey M. Herz, and Jennifer Lang.

Also Kathleen Lynch, Cindy Male, Marcia McArthur, John C. Neu, Linda Stitt, Neil Sturman, Ryk Tanalski, Tom J. Voth, and Ann M. Watson.

Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, May 2. Hours are **from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. No canvas or open-toed shoes and no bare feet.**



CON-TRIB DOLLARS—First half of $27,000 UCS pledge by Electronics-SD Con-Trib-Club members was made this month. In photo at right, Bob Murphy, (center) acting on behalf of UCS industrial committee chairman, accepts $13,500 check from Harry Shirley, Electronics-SD loaned executive during county-wide drive. Looking on is Joe Frivaldsky of UCS. Following presentation, Frivaldsky awarded Con-Trib-Club committee members individual citations for their efforts. In left photo, left to right are Ray Trent, Bill Lynt, George Leesch, Con-Trib chairman, Gerry Lynn, Gloria Cooper, Con-Trib secretary, and Fred Maus. Committee also allocates gifts to other charitable organizations as well as Emergency Aid Funds to Electronics-SD employes.

'Darkness Falls' Early at KM As Crane Severs Power Lines

Employes at Convair's Kearny Mesa plant were dismissed early April 17 after a truck-crane accidentally severed 12,000-volt electrical main feeder lines near Gate 10, cutting off power supply to the plant.

James H. Rainey, a Dept. 250-5 truck-crane operator in the crane operator's cab, reported minor eye irritation from the resulting flash and was given first aid. Jack D. Burrows, driver of the vehicle, suffered no injury.

Burrows and Rainey were moving the crane into position near the KM salvage yard to unload two milling machines from a flatbed truck when the raised crane boom contacted the three-phase feeder lines, severing two cables and damaging others.

"Both men kept cool heads and stayed with the vehicle," W. C. Downs, transportation section foreman, said. "Rainey lowered the boom, then Burrows pulled a few feet forward to get clear of the damaged lines."

Four division men—John Clinger, Eric Herz, Don Hallman, and John Butterfield — were trapped 35 minutes in an elevator between floors in Bldg. 3 until firemen arrived to assist.

Art Sambrano was removed from overhead crane No. 3 in Bldg. 5 by truck-ladder about the same time.

A nearby bulletin, posted earlier in the day following Apollo 13 splashdown, read "They're back safely—recovery operations in progress."

Everything electrical from computers and clocks to telephone push-button lights stopped at 1:05 p.m. Emergency battery-powered lights in building stairwells were activated automatically. Two environmental test lab tests—one at Site B and one at KM—and materials processing and other routine tasks were delayed.

"I never thought a fireball could be so big," Roy Eastberg, salvage section supervisor, said after the accident.

Since the broken lines fell across company perimeter fences, guards and maintenance personnel were detailed to patrol adjacent parking lot perimeters until it was determined the broken lines were no longer "hot."

Five security guards who arrived early for start of their shift at 1:48 p.m. went on duty 13 minutes early and all gates, except Gate 10 were opened for employe exits. The plant locksmith was detailed to direct traffic.

W. J. Stanley, manager of plant engineering, said San Diego Gas and Electric Co. crews moved in quickly to replace and splice cables and restore service. N. D. McFarland, electrical maintenance foreman, reported power partially restored at 5:10 p.m. and fully restored at 5:45 — with second shift factory work returning to normal.

7th Space Congress Hears Convair Men

Four Convair division men presented papers last week at the 7th Space Congress in Cocoa Beach, Fla.

"Why does the space shuttle look so unusual?" was title of a presentation by Robert A. Lynch. Jerome E. Butsko described "Space shuttle aerodynamic development studies" and M. J. Hurley gave a paper, co-authored by M. J. Lanfranco, on "Separation dynamics of multibody clusters of lifting entry vehicles."

Dr. W. H. Steurer gave a presentation on manufacturing processes in space, describing zero-gravity applications for composite casting, density control, and alloying of materials.

Dr. D. A. Dooley, Convair vice president — space programs, was chairman of a session on future mechanical space vehicle systems. Dr. George Mueller, General Dynamics vice president—programs and development, was moderator for a Thursday panel on space.

Convair had a display featuring its space shuttle development work and incorporating models of proposed space shuttle booster and orbital vehicles.

Group From Japan Will Visit Plant

A 17-man Union of Japanese Scientists and Engineers quality control study group will visit Convair division's Kearny Mesa plant May 6 for a series of presentations and tours.

Arranging the visit and hosting the Japanese industrialists are Dr. J. V. Ravenis of Electronics-SD and L. I. Medlock and Sam Petcher of Convair.

Medlock will brief the group on Convair products, Fred Lee Jr. will give a presentation on management of the inspection function in electronics manufacturing, and P. E. Gelles and W. T. Holler will describe quality control education programs.

NASA Executive Returns to SD

(Continued from Page 1)

individual from the U.S. space program and told Rotarians he believes scientific satellites will play a key role during the next 20 years in helping solve the world's ecological problems.

He pointed out that tracking of Hurricane Camille by satellite had enabled authorities to evacuate 70,000 people from the Gulf Coast.

Naugle said live TV could not be sent across the Atlantic in 1960, by 1965 it was possible but expensive, and by 1969 the quality had been improved and the cost reduced to 19 per cent of the 1965 rate.

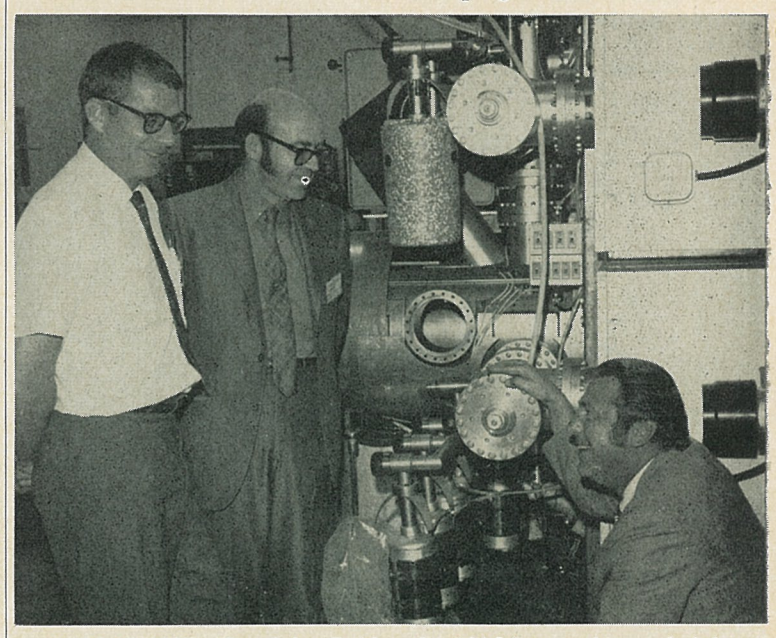
"Current Intelsat satellites have a capacity of 1,200 two-way telephone circuits or four color TV channels; the next generation of Intelsat satellites scheduled for next year will handle 5,000 two-way circuits," he said.

"Present Intelsats already operate at 75 per cent of capacity, and demand is increasing. The number of commercial ground stations is growing rapidly too—from five in 1965 to 52 in 1971, with station cost decreasing from $15 million to less than $4 million for current stations."

Naugle also cited examples of intercontinental medical conferences carried by satellite.

"In Project Mercury, we only required ground-based computers to determine, quickly and accurately, booster cutoff conditions," he pointed out. "In Apollo, however, we use computers throughout the mission in real-time—to calculate the trajectory to the moon and back; to compare three separate solutions for the lunar descent; to record and analyze thousands of bits of telemetered spacecraft information; to compare these to predicted values to detect trouble; and to monitor the well-being of the crew.

"For Mercury, the computer program contained 40,000 'computer words'; for Apollo, a 1,500,000-word program was needed."



NASA GUEST—Dr. John E. Naugle, NASA associate administrator for space science and applications, second from left, is briefed on space environmental effects system Convair is developing for NASA by Roy Bartle, left, and Dr. John Wray. Naugle was a Convair senior staff scientist before joining NASA 10 years ago.

CRA Offers Varied Travel 'Packages'

Convair Recreation Association is offering the following 1970 travel programs for employes and their families:

Europe — 22-day tours with various departure dates; from $595.

Hawaii — 15-day, four-island tours with weekly departures; $389.

Mexico—15-day Christmas "package" departing Dec. 19; $395 including most meals.

Travel programs to other areas can be arranged upon request. Phone CRA, ext. 1111 KM, for additional information.

Next travel meeting at which all programs will be discussed in detail will be at 7:30 p.m. May 6 in CRA Clubhouse auditorium.

Tennis Final Family Affair

Rick Norwood outplayed his dad, Cecil, 6-4 and 6-3 in the recent CRA winter tennis tournament to take the winner's trophy in men's advanced singles competition.

Other trophy winners were:

Intermediate men's singles — Tom Herold, winner; Yosh Yoshihara, finalist; 4-6, 7-5, 6-4.

Novice men's singles — Chuck Baker, winner; Manuel Fernandez, finalist; 29-27.

Advanced men's doubles — Bill Connor and Dave Gorham, winners; Jack Bowers and John Cannau, finalists; 17-16.

Intermediate men's doubles — Ed Pawka and Dave Gorham, winner; Mike Griggs and Yosh Yoshihara, finalists; 6-4, 4-6, 6-3.

Novice men's doubles — Fred Halemba and Steve Losch, winners; Fred Ferguson and Bob McGinnis, finalists; 14-10.

Mixed doubles — Diana and Mike Griggs, winners; Loretta Blevins and Bob Herold, finalists; 28-25.

2,000 Attend CRA Gem Show

About 2,000 lapidary work enthusiasts crowded the CRA Clubhouse auditorium April 18 and 19 to see exhibits ranging from faceted precious stones to artifacts in the CRA Rockhounds' annual gem show.

Jim Sugg of Convair's Dept. 149-0, show chairman, said the 60 exhibits were provided by about 40 club members and guests and that several of the guests attending were from outside the San Diego area.

Faceting was demonstrated for guests not familiar with lapidary work, business was brisk at an outside "swap table," small polished gemstones were given to all registering guests, and several prizes were awarded in hourly raffles.

Members of the club said many compliments on excellence of the show were received from visiting rockhounds.

Convair Mgt. Assn. Plans Spring Dance

Convair Management Association is sponsoring a spring dance to be held in Bahia Hotel's Mission Bay room, Saturday, May 16.

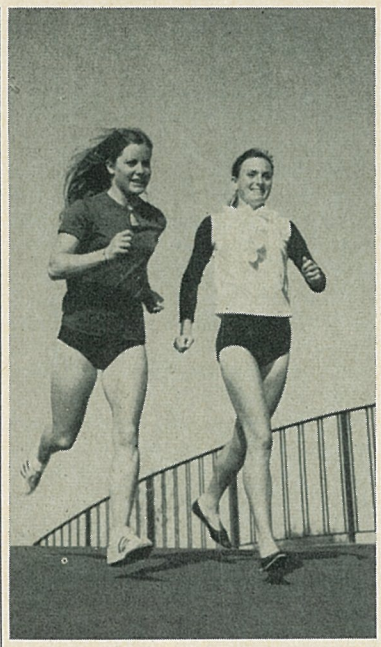
Chrit Connie's 10-piece orchestra and vocalist will provide music from 8 p.m.-1 a.m. A buffet, door prizes, and raffle are planned.

R. H. Gilliland of reliability control is chairman and may be contacted on ext. 697 LF for further information.

Tickets are available from boosters.

STATE COLLEGE OFFERS MASTER'S IN STATISTICS

San Diego State College has announced it will offer a master of science degree in statistics beginning with the 1970-71 academic year. Phone Dave Chigos at Convair's educational services office, ext. 2564 LF, for additional information.



WARMING UP — Judi Westervelt, left, and Maile Busby, both of CRA Health Club staff, get in a little practice before competing in 5,000-meter cross-country run.

Two CRA Runners Win Medallions

CRA Health Club entered eight representatives in San Diego Track Club's 5,000-meter cross-country run April 12 in Balboa Park but only two—a woman and a boy—brought home a medallion.

John Bierman took an award in the junior boy's division.

Maile Busby, one of the Health Club's women's instructors, took fourth place in the women's open division by touring the 3.1-mile up-and-down-hill course in 22 min. 31 sec.

Judi Westervelt, also a part time women's instructor at the club and a physical education major at San Diego State College, competed in the same division.

CRA competitors in men's divisions were Wayne Groesbeck, Ken Busby, Charles Bierman, Bill Marks, and Ralph Mansfield (Health Club director).

Ham Club to Hear Life-Saving Operator

Julio Ereneta, an amateur radio operator widely known for providing emergency assistance through use of his station W6-ZOM, will describe some of his most interesting experiences at a meeting of the CRA Radio Club at 7:30 p.m. May 7 in the CRA Clubhouse.

Alex Halyburton, Radio Club commissioner, said Ereneta's ham operations have saved lives in remote regions of Baja California and many other parts of the world.

Adventurers to Hear Snakebite Talk

CRA Adventures Club invites all Convair outdoors enthusiasts interested in safety in the field to attend a special color slide presentation entitled "What to do in case of snakebite," tonight (April 29) in the CRA Auditorium.

Guest speaker for the 7:30 p.m. program, Dr. William T. Soldmann Jr., of La Mesa Medical Center, will also tell about poisonous plants, spiders and insects of the Southwest.

Reservations Open For South Gate Trip

Reservations are still being taken for a Convair Management Association-sponsored tour of the General Motors assembly plant in South Gate next Monday (May 4). Cost is $3 and buses will leave the Kearny Mesa plant at 4 p.m. Phone Helen Cook, ext. 3146 KM.

Scenic Cycle Circuit Set Sunday in Park

CRA Bicycle Club has scheduled a 12-mile scenic cycle ride through Balboa Park at 2 p.m. Sunday (May 3). The group will meet behind the organ pavilion. John Swartz will be ride leader.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 KM. Deadline for next issue of GD/NEWS is May 5. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS — Meeting tonight, April 29, 7:30 p.m.

BADMINTON — Play Mondays, 7-10 Federal Bldg., Balboa Park.

BICYCLE CLUB — Balboa Park 12-mile ride, 2 p.m., May 2. Silver Strand 25-mile ride, 9 a.m., May 9. Otay Mesa 50-mile tour, 7 a.m., May 23.

BONAIR FLYERS—Meeting May 7, 7:30 p.m.

BRIDGE — Duplicate bridge sessions each Friday, 7:30 p.m.

CERAMICS — Meet Tuesdays and Thursdays, 9 a.m.-noon and 7-10 p.m.

CHESS—Play May 6, 7 p.m.

CHORUS — Rehearsals Mondays, 7:30 p.m.

COINEERS — Meeting May 11, 7:30 p.m.

COUNTRY & WESTERN MUSIC — Meet Thursday, 7:30 p.m.

FENCING — Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GARDEN CLUB — Meeting May 6, 7:30, Floral Association Bldg., Balboa Park. Orders for Mother's day corsages are now being taken.

GOLF—San Carlos tournament, May 10-11, tee-off time 7 a.m.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m. Monday through Thursday; 9:30 a.m. to 9 p.m., Fridays; 10 a.m. to 5 p.m., Saturdays; "Women only" weekdays, 9:30 a.m. to 11 a.m.

HI-FI MUSIC—Meeting May 12, 7:30 p.m.

ICE SKATING — GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1.00 (includes skates).

JUNIOR SCIENCE—Meeting May 1, 7:30 p.m.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Wednesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Shoot May 9, 9:15 a.m. at San Diego police pistol range.

RADIO CLUB—Meeting May 7, 7:30 p.m.

RIFLE CLUB—Senior shoot May 13, 7 p.m. Junior shoot May 2, 9 a.m. Gillespie Field Range.

ROLLER SKATING—GD family skate night May 18, 6:30-9:30 p.m., Skateland, Front & G Sts. Tickets (5 cents) available at employe benefits.

SCULPTURE — Workshop sessions Mondays, 7:30-10:30 p.m.

SKI CLUB—Meeting May 5, 8 p.m. South Bay Club.

SPORTS CAR CLUB — Photorama, May 17, 10 a.m.

SQUARE DANCE — Dance Thursday, 8-10 p.m.

SWIMMING—GD family swim night, May 16, 7-9 p.m., Mission Beach Plunge. Tickets (5 cents) available at employe benefits outlets.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays 10 a.m.-4 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamic Toastmasters No. 457, Thursdays, 5:30 p.m.

TRAILERS—Meeting May 5, 7:30 p.m.

WOMEN GOLF—Singing Hills Tournament, May 9, tee-off time 10 a.m.

Dittmann Takes Masters Class

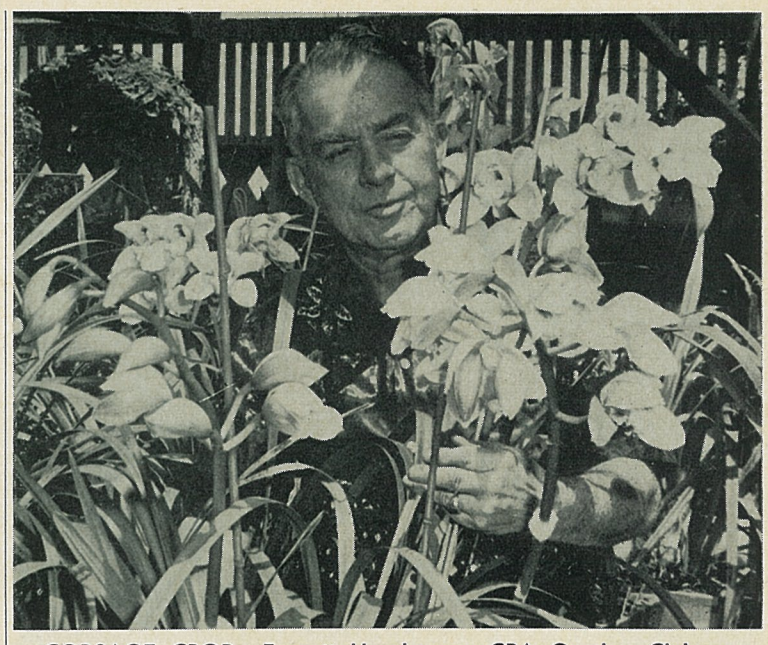
CRA Pistol Club marksman Bill Dittmann swept masters class competition, firing 286-5x in April 11 matches. Warren Walker followed with 281-6x.

Other matches and winners were: Expert — Jerry Lehrer, 279-4x; Dick Sutton, 274-3x. Sharp shooter—Ron Cole, 251-2x. Short national — Jim Halfacre 275-8x; Sutton, 271-1x; Paul Pemberton, 264-3x; Lehrer, 264.

In outside competition the same day CRA Pistol Club tallied 1,126 points to top Cubic team's 1,016.

Club's pistol team for the second quarter includes Halfacre, Charles Kropp, Lehrer, Don O'Brien and Roland Schneider.

Next match will be May 9 at 9:15 a.m. at S. D. police pistol range.



CORSAGE CROP—Everett Henderson, CRA Garden Club commissioner, checks cymbidium orchids that are destined to become corsages for General Dynamics wives and mothers for Mother's Day. He has 2,000 blooming in his back yard.

Orchids...by the Corsage Await Dynamics Mothers

Cymbidium orchid corsages in a variety of colors will be available from CRA Garden Club for General Dynamics employes for Mother's Day.

Blooms in white, blush, pink, yellow, yellow with red lips, light green, dark green, and maroon colors are being offered. Ribbons can be ordered in matching or contrasting colors.

Cost will be $2.50 for a single-bloom corsage, $3 for a double, and $3.50 for a triple. Order blanks are available through employe benefits and CRA outlets and through Garden Club members or Everett Henderson, commissioner, phone 274-1754.

Most of the orchids used will come from 2,000 being grown by Henderson, a timekeeper in Convair's Dept. 193-3, in his back yard at 3503 Yosemite St., Pacific Beach.

Henderson's yard is covered with a saran screen to cut sunlight 42 per cent and damper wind. One of his more unique plants produces an olive green orchid with a deep red lip and he has several miniature - orchid plants.

His more fragile cattleya orchids grow in a small humidity-controlled greenhouse.

Henderson began growing orchids in 1953 while he was on the F-102 program at Edwards AFB and purchased a cattleya plant at a flower show at Hollywood Park.

He has paid $50 to $75 for plants and $125 for one Lillian Stewart cymbidium.

Henderson sells spikes (branches) of orchids to florists periodically and after retiring next year plans to improve his stock and become a full-time commercial grower.

He also grows roses and other flowers, has a twisted juniper trimmed and styled like a Japanese banzai tree to be pictured in a future issue of California Gardens magazine, and spends some of his spare time speaking to garden clubs and serving as a floral-section judge each summer at the Southern California Exposition and San Diego County Fair.

Several of the Garden Club's 110 other members also raise orchids. The club's biggest orchids delivery was 400 corsages for a Convair Management Club dinner-dance year before last.

* * *

Mrs. David Stein, a home economics teacher with San Diego City Schools, will discuss preparation of fruits and vegetables for canning at a CRA Garden Club meeting at 7:30 p.m. May 6 in the Floral Building, Balboa Park. All interested General Dynamics people are invited.

The Garden Club's fall show will include a section for canned fruits and vegetables.

Navigators Will Follow Photos In Annual Sports Car Club Event

Convair Sports Car Club's annual Photorama fun rallye has been scheduled May 17 with cars to leave the parking lot opposite the Missile Park entrance at Kearny Mesa at one-minute intervals beginning at 10:01 a.m.

Art Wrightson, rallye master, said odometers (mileage indicators) on entering vehicles will be covered with poster paint and all navigational devices except timepieces will be prohibited.

Photo reproductions of points along the course and general instructions will be given participants in each vehicle for navigation. The course will cover more than 100 miles of scenic paved roads in San Diego County, ending at Torrey Pines Inn.

Wrightson said all interested individuals and family members may participate and that any vehicle, including family sedans and station wagons, may be used.

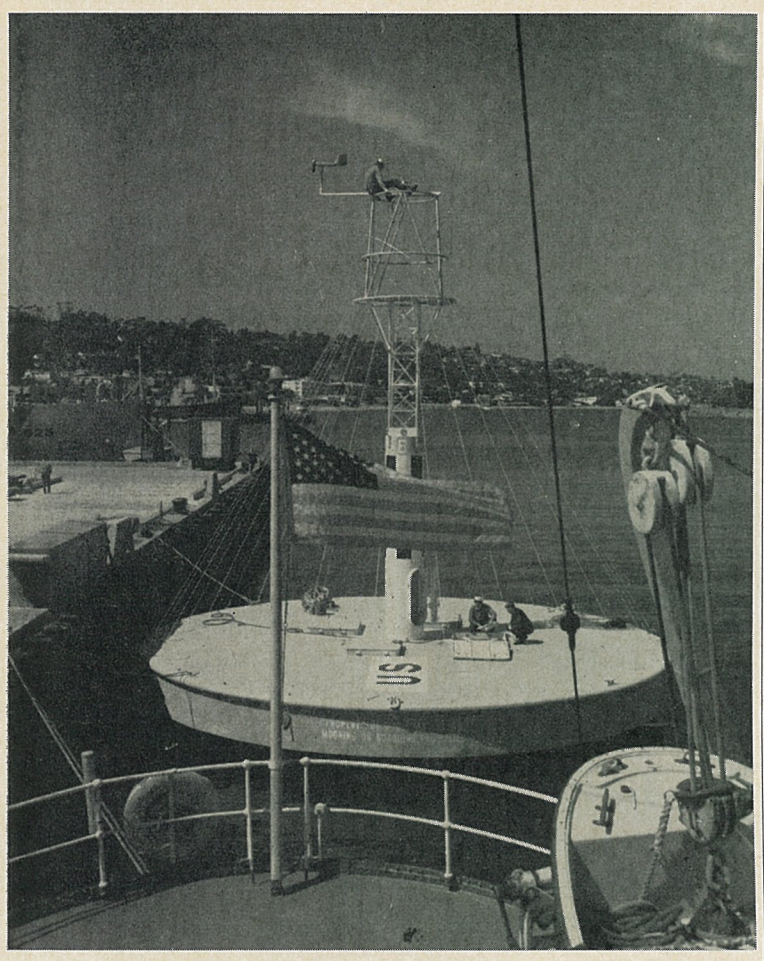
Pre-event entries close May 10 and fee is $4.50. Entry fee the day of the rallye will be $5. Participants are to check in a half hour prior to their starting times.

Cars will be clocked at several unannounced checkpoints along the rallye route and winners will be determined by comparing actual with normal average-speed times between points. Time will be clocked in 1/100-minute segments.

Trophies will be awarded to drivers and navigators of the five cars with least amount of error. Additional trophies will be awarded to drivers of runner-up cars on the basis of one trophy for each 10 pre-event entries.

Registration forms will be available at employe benefits outlets. For additional information, call Wrightson, ext. 1591 KM, or Gary Rankin, ext. 1678 LF.

GIDDAP GROUP—Thirty-six Convair family members are learning rudiments of horsemanship in CRA Riding Club-sponsored junior and senior classes in Bonita. That's Len Sidock of Convair's Dept. 832-2, class director, ready to start this group off.



TEST BUOY—Convair-produced composite-material buoy is pictured before being towed to sea April 7 by Coast Guard cutter Walnut. Buoy now is anchored off San Clemente Island (near San Diego) and is being used in sea lanes test program conducted by Convair division under Coast Guard contract.

F-111 Test Aircraft Return to Flight After Passing Checks Exceeding 7 Gs

Fourteen F-111 test aircraft have passed room temperature proof tests with flying colors and are returning to flight status.

The tests paved the way for cold-weather proof testing of production aircraft, tentatively slated to get under way in May.

F-111A No. 13—first test aircraft to undergo room temperature tests—was subjected to loads exceeding 7 Gs with the wings at 56 degrees. The test was done in a special fixture at Fort Worth division.

Other test aircraft were subjected to loads in the 4 and 5 G range, depending on the aircraft's test mission. Completing the proof test were F-111As 14, 29, 25, 21, 28, 22, 12, 23, 26, and 24; F-111D No. 1; F-111E No. 2; and FB-111A No. 2 and 5.

FB-111A No. 3, another test plane, was scheduled to be used in a checkout of the cold weather test fixture itself (without the cold soak).

"The remaining aircraft in the flight test program will undergo cold weather tests because of the more critical nature of their test mission," said Bob Moller, manager of F-111 flight test.

Cold weather proof tests will be conducted in two specially built "igloo" facilities at Fort Worth, and one each at Waco and Sacramento, Calif.

In these tests, the aircraft will be cold-soaked to minus 40 degrees F., then subjected to positive G loads of over 7 Gs.

The first of two "igloos" to be used at Fort Worth is slated for completion in early May, while the other is expected to be in service by early June. Facilities at Waco and Sacramento are also tentatively slated to open in June.

F-111A No. 75—a test aircraft—will be the first to go through cold weather tests at Fort Worth.

"We selected this airplane," Moller said, "because it is equipped with strain gages and will serve as a good test bed for the fixture."

★ ★ ★

Carry-Through Box Withstands Equivalent to 16,000 Hrs. in Air

The F-111 wing carry-through box has been tested to the U.S. Air Force requirement for a 10-year service life.

It has withstood test loads equivalent to 16,000 hours of flight—four times the estimated number of hours that the aircraft would actually fly in 10 years.

The 16,000th hour was passed recently in tests at Fort Worth division. Ground tests of the wing carry-through box are continuing to determine its ultimate fatigue life.

The F-111's variable-sweep wings are attached to the wing carry-through box, a high-strength steel assembly. Test results verify the structural fatigue life of wing carry-through boxes installed in all production F-111 aircraft.

These carry-through boxes will be qualified for a minimum of 10-year service life by incorporation of three refinements resulting from earlier experience in the fatigue test program. These refinements include the addition of small gussets at the corners of an access hole, a more exacting treatment of bolt holes and bolt fit, and polishing some parts of the surface.

Purpose of fatigue testing is to determine the length of time that a structural component will be able to withstand the repeated loads imposed by flight maneuvers.

Such repeated loads eventually produce fatigue or cracking of metals. It is in the test laboratory that engineers determine when fatigue will occur and what portion of the component will be affected.

A four-to-one safety factor is employed in fatigue testing of F-111 structural components.

This means that the wing carry-through box has to withstand four times the number of maneuver loadings anticipated during 10 years of service operation at the rate of 400 flight hours per year. The laboratory tests have now simulated maneuver loadings equivalent to 16,000 hours of flight during a 40-year period.

STATEMENTS SENT TO ALL MEMBERS OF SAVINGS PLAN

All members of the Savings and Stock Investment Plans should have received at least one statement from Bankers Trust relating to their individual accounts. Members of the plan prior to Jan. 1, 1967 should have received two.

Those who elected to withdraw 1966 accounts received a "Statement of Distribution" which was attached to the distribution check. Information on this statement will be needed when preparing 1970 income tax returns.

A "Statement of Deferred Account" was sent to those members who elected to defer distribution of their 1966 accounts.

An "Annual Statement" was sent to every plan member, describing the status of the 1967, 1968, and 1969 accounts as of Dec. 31, 1969.

In the event a member did not receive all the statements to which he was entitled, or if an error was detected, please contact employe services offices immediately.

Members were advised to retain all Savings and Stock Investment Plan statements in a safe place for future reference.

Magnuson Presides At ZD Symposium

W. E. Magnuson, chairman of Convair division's Craftsmanship program, was presiding chairman and master of ceremonies for the third national symposium of the American Society for Zero Defects this month in Anaheim.

Astronaut Alan Bean and executives from several military and industrial organizations were among symposium speakers.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

GEORGE CHOPP (1966) from Stromberg-Carlson to Corporate Headquarters as assistant director of labor relations; **THOMAS BURRELL** (1967) from Electronics, Rochester to Stromberg-Carlson; **DICK S. ABBOTT** (1953) from Pomona division to quality assurance representative, Fort Worth; **PHILIP P. HOWIE** from Fort Worth to manufacturing engineer, Convair; **HENRY R. KENT** (1968) from Convair to Stromberg DatagraphiX as senior mechanical design engineer; **THOMAS CONDRON** (1968) from Electric Boat to senior master planner, Quincy; **CHARLES SHIELDS Jr.** (1963) from Electric Boat to Quincy as staff administrative assistant; **EVERETT P. WATT Jr.** (1961) from Pomona to Fort Worth; **ALLEN B. COX** (1956) from Pomona to Convair as engineering manager; **RODNEY JOHNSTONE** (1968) from Electric Boat to master planner, Quincy; **DAVID M. FESTA** from Material Service to Electronics-SD as management systems specialist; **WILLIAM D. CALDWELL** (1963) from Pomona to Corporate Headquarters as management development administrator; **CURTIS W. GOATES** from Electronics, Rochester to DatagraphiX as service representative; **ARTHUR J. GORMAN Jr.** from Quincy to staff accountant, DatagraphiX; **R. A. GALE** from Quincy to industrial services, Electric Boat; **HAROLD KEANE** (1965) from Electric Boat to scheduling specialist, Electronics-Dynatronics operations; **MICHAEL S. BICKERS** (1961) from Convair to director of engineering, Material Service; **JAMES PLATT** (1959) from Electric Boat to systems development specialist, Quincy; **VERNON PETRANEK** (1968) from Electric Boat to Quincy as program analyst; **WALTER J. GEUDTNER Jr.** from Cleveland Field Office to Convair as requirements engineer; **ADAM D. SHAWKEY** (1949) from Pomona to Convair as assistant to director of contracts; **ROY E. HARRIS** (1957) from Pomona to Fort Worth; **NORMAN F. DAVIS** (1956) from Convair to cost accounting supervisor, DatagraphiX.

CONTROLLERS CONFER—Division controllers met April 13-16 at Pomona division. Attending were, seated, from left: Howard E. Wall, Quincy; John D. Milling, Convair; John B. Hunter, Canadair; Edward E. Hatchett, Fort Worth; Stanley S. Gregory, Material Service; J. Dent Eiland, Pomona; O. D. Center, Stromberg-Carlson, and T. L. McPherson, Electric Boat. Standing, from left: Roy E. Brewton, consultant; J. C. Ruggier Jr., Arthur Anderson and Co.; John T. Murray, Marblehead Lime; Jerry McMurtrey, Freeman and United Electric Coal; Clifford H. Wychgram, Electronics; and from Corporate Headquarters, Edward J. Tucker, Charles L. Massey, David L. Thomas, H. K. Pederson, James P. Ross, James H. Wills and John G. Lemon. It was first time Pomona has hosted controllers' annual meeting.

OCD Analyst Says:

Basement Among Best Places To Escape Nuclear Fallout

Phillip R. Boubel Jr. is one of a relative handful of people who knows where to go and what to do after a nuclear explosion.

The Fort Worth division Dept. 167-1 engineer recently completed a graduate-level course for engineers and architects, Fallout Shelter Analysis, offered by the Office of Civil Defense through Tager Network.

Now, as a qualified OCD shelter analyst, Boubel will help OCD in its extended search for "safe" fallout facilities.

"Our plans," Boubel said, "are based on locating survivors a minimum of one hour after a nuclear blast. We're looking for facilities most likely to reduce effects of fallout."

Boubel says the safest locations are generally in basements and the middle floors of multi-story buildings.

"About 90 per cent of fallout will seep through structures at 'ground' level," Boubel says. "This type fallout is classified as ground, scatter or skyshine.

"The remaining 10 per cent usually comes from overhead—through the top of the building. Since radiation is reduced in strength after passing through each barrier—things like walls, ceilings and floors—the basement and middle floors usually provide most protection."

Boubel says denser materials such as brick, cement, stone and steel reduce the fallout level but do not stop it.

"Wood offers little resistance to fallout," he says, "and glass has no resistance to speak of."

Boubel says OCD is encouraging builders to keep such factors in mind when possible in constructing new buildings. For example, simply filling concrete blocks with sand—a relatively cheap step—would make the building much more resistant to fallout.

How to maintain and provide fallout facilities is covered in a second course — Environmental Aspects of Engineering—offered through Tager. Boubel plans to take the course next year.

"A shelter must not only protect against fallout, it must be adequately stocked with food and water," he said. "Most things obtained from outside the shelter would be contaminated."

OCD headquarters is located in Denton. The huge underground facility is built and stocked to accommodate 500, mostly key people in the area.

"The facility is said to be a first alternate site for the president in case of a nuclear disaster," Boubel says.

PLANNERS—Phillip R. Boubel, left, Fort Worth engineer who now qualifies as Office of Civil Defense fallout shelter analyst, discusses division's emergency plan with Phil Cummins, Emergency Corps chief.

10-Day Drive Scheduled To Boost Bond Buying

Convair division's role in the world's biggest thrift operation—the purchasing of U. S. Savings Bonds — will be highlighted in a 10-day drive May 18 through May 27. The goal is to sign up new bond buyers and encourage current participants to increase their savings.

Currently 74 per cent of Convair employes join the 10 million Americans buying bonds through payroll saving plans.

For as little as 50¢ a week through payroll deduction, employes may order Series E Bonds which pay 5 per cent interest when held to maturity in 5 years and 10 months.

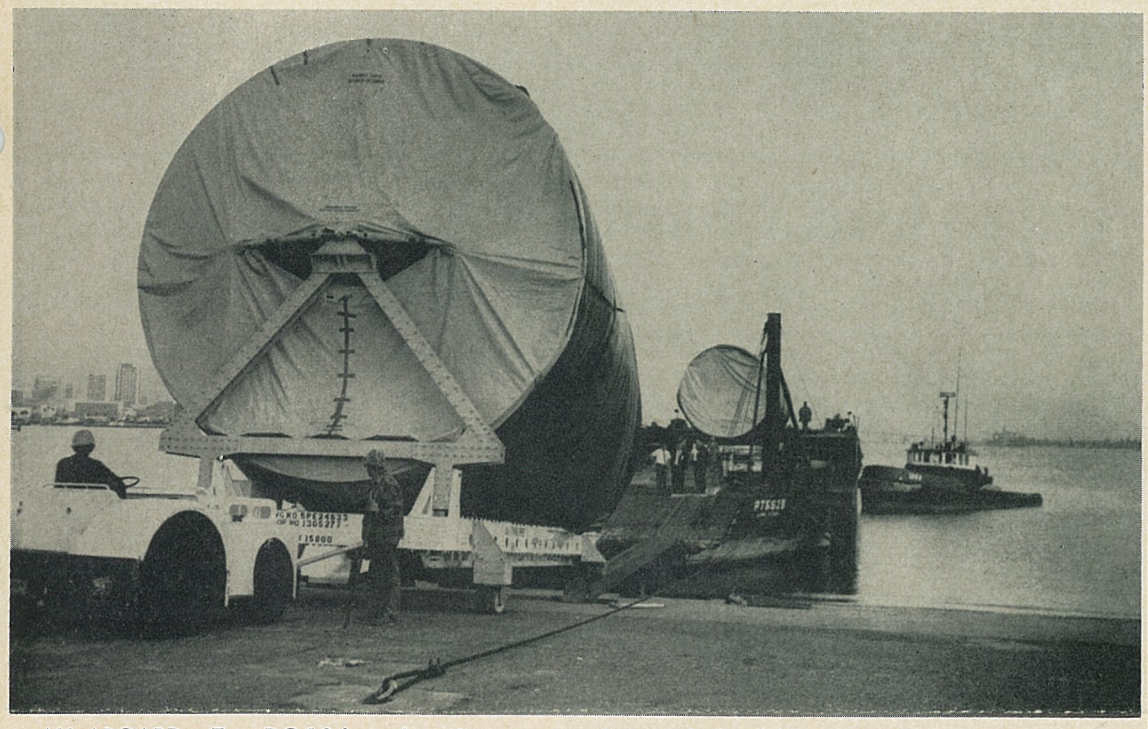
C. F. McMenamy, campaign coordinator for the division, commented: "We at Convair have always been a leader in Savings

(Continued on Page 2)

SAN DIEGO EDITION

GENERAL DYNAMICS
NEWS

Vol. 23, No. 9 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, May 13, 1970



ALL ABOARD—Two DC-10 barrel sections are gently eased aboard barge at Convair division ramp. Tug towed them to Seal Beach and from there they went by truck-trailer to Douglas' Long Beach plant.

Dynamics Reports $11,506,000 Net

Net income of General Dynamics Corporation for the three months ended March 31, 1970, was $11,506,000, equivalent to $1.09 per share of common stock, Roger Lewis, president, announced late last month.

Net income for the same period in 1969 was $7,482,000, equivalent to 71 cents per common share. Lewis noted that earnings in the first quarter of 1969 were depressed by write-offs on certain long-term surface ship and submarine contracts.

Sales of the three months ended March 31, 1970, were $569,215,000, compared with $598,430,000 in the first quarter of 1969.

Directors of General Dynamics declared a regular quarterly dividend of 25 cents per common share, payable June 10, 1970, to share owners of record May 11, 1970.

Electronics Division's Sales Volume up in '69

Electronics division's sales volume last year continued a five year pattern of growth — with Electronics-SD's sales exceeding its goal about 15 per cent, A. G. Daubert, Electronics division general manager, told 200 Electronics-SD Management Club members in a "state of the division" address last month.

Daubert cited Electronics-SD's achievement of operational flight status of spaceborne miniature transponders and recognition as a systems design and management team in the intelligence data collection field as "significant events" for the year.

Need for each Electronics operation to remain viable and aware of potential business opportunities was stressed as Daubert pointed out that total Department of Defense (DOD) expenditures are to be pared from 41 to 35 per cent of the federal budget for fiscal year 1971.

Electronics-SD was commended for its development of new non-DOD but possible future high-potential programs, including research and development work with the U. S. Post Office Department.

Daubert said DOD officials expect reduced research-and-development funding to result in less pushing of "state of the art" directly from development to product — with DOD expected to look for a "prove out" phase be-

(Continued on Page 6)

Medlock Heads National ASQC

L. I. "Russ" Medlock, director of reliability control for Convair division, yesterday (May 12) was installed as president of the 24,000-member American Society for Quality Control (ASQC) at the organization's 24th annual technical conference in Pittsburgh, Pa.

ASQC is a world-wide educational and scientific society with more than 140 sections in major cities in the United States, Canada, Mexico, and Japan for individuals engaged in quality control, reliability, inspection, research and development, statistics, and related fields.

Medlock, a veteran of 28 years with Convair, has been affiliated

(Continued on Page 2)

DC-10 Sections Take Sea Route to Douglas

Carefully shrouded in special vinyl coverings to protect them from spray, two barrel sections for the DC-10 (C/D and F/G) were transported safely by barge and truck from San Diego to the Douglas Long Beach plant May 1-2.

Previous deliveries of the Convair-built sections have been by air. However, the sea route, always a back-up alternative, was chosen when the Super Guppy was not immediately available.

The sections were loaded at the Convair ramp and a commercial tug pulled the barge the 95 miles to Seal Beach at a 7½ knot clip.

"It was a smooth trip," J. J. Janssen, Convair traffic supervisor, who was aboard the tug, reported. "Not a drop of water splashed on the cargo." (During the night Janssen grabbed a few winks of sleep, keeping warm by curling up near the smoke stack!)

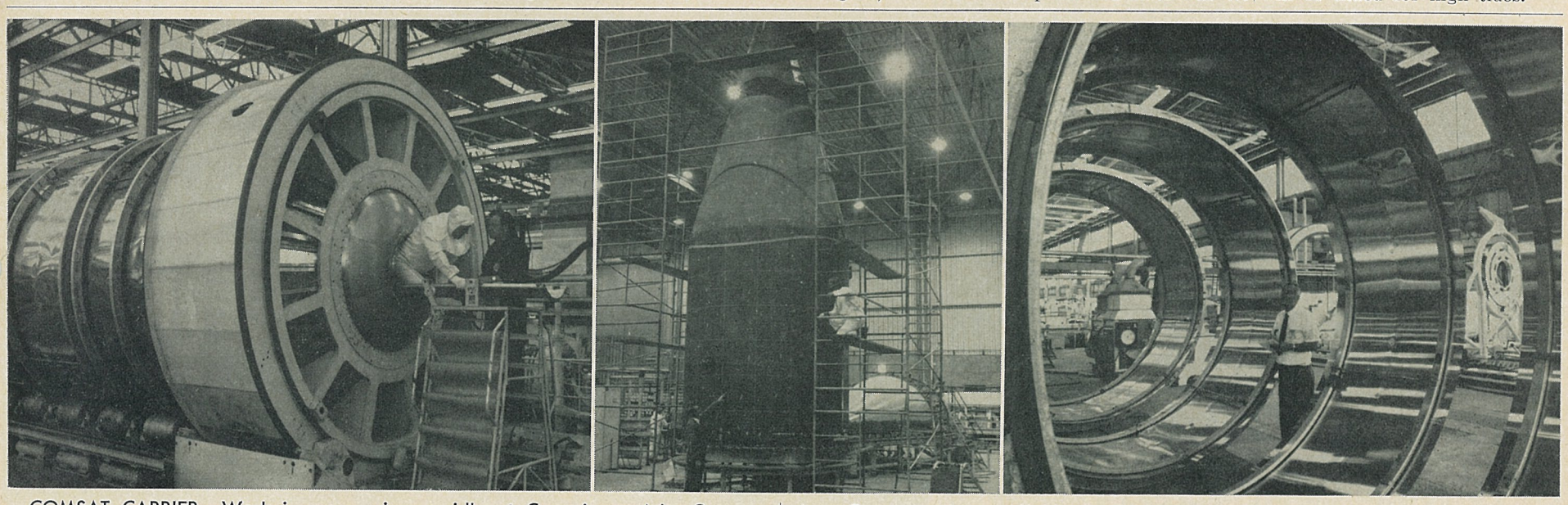
Also aboard the tug in addition to captain and mate was W. E. Workman, Douglas transportation engineer.

The voyage started about 11 p.m. Friday, May 1, and the sections were unloaded during early afternoon Saturday at Seal Beach where they were met by a trailer specially modified by Douglas.

R. D. Allen, Douglas manager of transportation, coordinated the trucking phase, which required considerable planning. Permission for special highway routing was required and utility crews accompanied the caravan to facilitate passage of utility lines.

"The vinyl coverings stood up well during the ocean trip," J. C. Ruzich, Convair general supervisor of shipping and traffic, reported, "but they took a beating from high winds during the truck trip. However, there was no damage to the sections."

Ruzich reported that low tides complicated loading and unloading and that future deliveries by sea will be timed for high tides.



COMSAT CARRIER—Work is progressing rapidly at Convair on Atlas-Centaur 25 launch vehicle and fairings for use in launching COMSAT-managed first INTELSAT IV commercial communications satellite in 1971. At left, E. W. Thompson leaves forward tank of Centaur 21-D after final inspection as leadman M. F. Gabriel watches. In center photo, Bob Redman, a Centaur final assembly foreman, and Lew Carpenter (on scaffold) discuss test alignment of nose fairing sections. The sections later were to be coated with cork and painted. At right, F. W. Fitch, major assembly foreman, checks skin assemblies for Atlas 5005C, the Atlas-Centaur 25 booster, before they were moved into major weld fixture. Completion of booster final assembly is scheduled next month.

10-Day Drive Will Commence To Boost Bonds by Deduction

(Continued from Page 1)

Bonds campaigns. Now, in these critical times, we each have a personal opportunity to continue this support while increasing our own savings."

Jack L. Bowers, Convair president, said "unrest and lessening of traditional patriotism among many in the United States make it even more important for us to really push the Savings Bonds campaign this year."

Department functions with 100 per cent participation will receive small American flags mounted on pedestals to display as an indication of their achievement.

Supervisors will be contacting their personnel to point out that buying bonds through payroll saving is the easiest way to "pay yourself first" and assure 5 per cent return while helping your country.

Last year's campaign at Convair resulted in 2,300 new bond buyers being signed — achieving more than 90 per cent total participation.

CRAFTSMANSHIP

Race Track Trek Planned Next Month

A "day at the races" for Convair Management Association members and guests has been scheduled June 14 at Caliente Turf Club.

Tickets will be $2.50 (a $1.50 saving) and will cover admission, a margarita cocktail, and buffet dinner. They will be on sale through Management Association boosters after May 25.

ASQC LEADER—L. I. Medlock, Convair division director of reliability control who has been elected president of American Society of Quality Control, is shown with division quality exhibit on display this week at ASQC annual technical meeting in Pittsburgh, Pa.

'Whiz Kids' Vie In Math Match

More than 250 top math students from 44 city, county, and independent high schools will compete Saturday (May 16) at San Diego State College in the 13th annual Honors Math Contest to be sponsored by Convair division and the college's math department.

Bruce Lundin, director of NASA's Lewis Research Center, will be guest speaker at an awards dinner for the participants May 21 in the ballroom of the Hotel del Coronado. Parents of the youth also will be invited to the awards presentation.

The top six-member math team in each of the three school divisions (city, county, and independent) will receive a trophy and each member of the team will be presented a pen and pencil set.

Highest-scoring students in each division will receive $100; the second highest, $50, and the third highest, $25. The three highest-score students on each of the 44 teams also will be awarded certificates.

Competing teams, selected by math teachers at each school, will be composed of students enrolled in second-semester honors math or equivalent courses.

Medlock Heads 24,000 Of Quality Control Society

(Continued from Page 1)

with ASQC 17 years. He had just completed his second term as vice president-membership education and development and previously served as chairman of both the ASQC western regional council and the San Diego section. He was elected a fellow of ASQC in 1966.

After joining Consolidated Vultee (now Convair) as a student inspector in 1941, Medlock held various inspection and quality control positions. He was manager of quality control and manager of reliability control-launch vehicle programs before being appointed director of reliability control for the division in 1966.

He holds awards both from the Air Force and the federal government for his work on Atlas.

Medlock is the second General Dynamics representative to serve as ASQC president. J. Y. McClure, now Fort Worth division vice president-quality assurance, was 1960-61 president.

Three General Dynamics men are presenting papers at the annual conference.

Paul E. Gelles of Convair division is giving a paper on "Quality control education in the high school." A. P. Alaimo of Electronics-Rochester is presenting "Recommendations for corrective action systems. Earle F. Peacox of Electronics-Rochester is discussing "Rating inspectors and evaluating inspection."

Among those attending from Convair, in addition to Medlock, are Sam Petcher, chairman of the San Diego ASQC section, and A. J. Woodington, chairman of the national ASQC metrology committee.

A large display stressing 50 years of quality at Convair and the division's current work on space shuttle technology is being exhibited.

Group Honored For Cost Saving

Personnel of financial and program control section of Convair's material department were presented Certificates of Award recently in ceremonies in LF engineering auditorium for cost reduction suggestions approved during the first quarter of 1970.

Seventy-eight cost reduction proposals, submitted by 27 employes, totaling $1,141,700 were approved. Over 50 per cent of the department received awards, setting a record for the largest participation by one department in the Cost Reduction Program, J. R. Rogers, manager, said.

Dept. 860 LF employes receiving recognition were: G. E. Brown, A. R. Brunner, E. R. Cash, F. Cicalo, Edith W. Danos, J. Folchi, N. Grand, E. Haberkamp, J. Harper, C. Lent, H. C. Leppart, W. A. Moss, W. R. Osgood, Doris M. Parker, R. H. Ross, and M. Swinney.

KM employes included D. L. Bolger, R. A. Dirkschneider, D. J. Gallagher, R. H. Knapp, J. H. Kunkle, J. J. Letzring, D. Lewis, D. T. Murphy, E. Rasp, R. C. Thomas, and L. H. Thoulion.

Speech Training Completed by 17

Seventeen Convair men received certificates April 30 on completion of an eight-session Convair Management Association-sponsored speechcraft course that was conducted by Dynamic Toastmasters Club 457. Ray Eichmann of Dept. 958-4 was coordinator and the course was organized by George Moore of Dept. 059-2.

Receiving certificates were W. H. Discher, Dept. 598-2; W. W. Frase, 195-9; L. V. Harrison, 810-0; S. A. Horning, 400-8; C. J. Riley, 780-5; K. R. Lemley, 566-2; A. G. Lilley, 400-2; J. R. McLemore, 566-1; L. S. Peterson, 953-2; Henry Claudy, 420-1; Frank Reavell, 989-4; J. L. Williamson, 401-5; D. W. Riordan, 595-6; Roger Hollings, 195-9; W. L. Larson, 400-9; D. S. Oesterle, 584-0, and Paul Castillo, 400-3.

Boyer Boy's Math Takes Top Trophy

V. E. Boyer Jr., a Point Loma High senior and son of Vern Boyer of Convair's Dept. 516-0, won first place trophy and a $100 cash award May 1 in the 17th annual Science Achievement Awards examination at Naval Electronics Laboratory Center.

He was one of 14 students from 11 schools to qualify as finalists from among 60 competing the previous week in a preliminary test.

'Speakers' District Elects Hal Story

Hal Story, a quality control engineer in Electronics-SD's Dept. 922, has been elected president of District 5 of Toastmasters International. He will succeed Durwood English, supervisor of proposal development in Convair division's Dept. 195-2, July 1.

District 5 includes 50 Toastmasters clubs with 1,000 members in San Diego and Imperial counties and Baja California.

MILLION $ SUGGESTERS—Convair material financial and program control department personnel received Certificates of Award for cost reduction proposals totaling $1,141,700. On hand to add congratulations were (front row from left) J. R. Rogers, manager, and chiefs A. L. Deane, F. S. Brown, R. B. Amick, R. F. Fox, and R. H. Quinn.

Log Book Entries

Service Emblems

CONVAIR

Service emblems awarded between May 1 and May 15.

Thirty-year: Dept. 019, V. T. Winsor; 031, E. M. Moore, W. E. Porter; 059, F. L. Olson, 149, A. N. Ennis, L. J. Francis; 250, J. W. Vint; 400, L. G. Bovee; 514; A. W. Kellogg; 756, W. J. Butts; 810, R. C. Fildes, L. V. Wisniew.

Twenty-five-year: Dept. 057, J. P. Nowak; 059, Lora M. Young; 420, J. Weber; 579, G. D. Lindeneau; 761, O. J. Sonsteng.

Twenty-year: Dept. 031, D. R. Davis; 045, Pearl M. Allen; 195, L. P. Stockton; 250, B. A. Rusk, D. R. Sperandio; 451, E. E. Cooper; 553, F. W. Arford; 780, W. Hungerford, Bernadette E. McKeown, C. G. Woodward; 967, C. L. Cozzens; 985, V. C. Cardiel Jr.

Fifteen-year: Dept. 045, J. T. Kucala; 046, R. E. Vazquez; 149, W. S. Lawson; 204, Elizabeth R. Ford; 420, C. W. Mattson, D. A. Scott; 566, W. S. Ludlow IV, H. C. Meservy; 596, M. G. Fox; 961, E. H. Curriden; 985, L. N. Haines; 989, J. Roehl, J. E. Sanner.

Ten-year: Dept. 059, Billie C. Somerville; 149, J. L. Eiland; 250, K. McConnell, R. B. Minga; 574, M. G. Schoch Jr.; 780, J. L. Helmken; 952, R. E. Parker; 954, W. W. Holt; 979, E. L. Grotz; 985, Ruth Ann Cordial; 999, W. C. Brocato.

ELECTRONICS

Fifteen-year: Dept. 426, J. E. Williams.

Ten-year: Dept. 105, J. J. Marocco; 413, J. F. Valade.

Awards

CONVAIR

Employe Suggestion awards for the week ending April 24:

A. R. Anderson, Dept. 027, $22.50 (three awards); J. F. D'Alessandro, 761, $7.50; G. Johnston, 780-1, $15; J. P. Lemon Jr., 059-4, $45; A. A. Lockwood, 015, $30; J. B. Mesa, 027, $7.50; R. D. Ostovich, 759, $15; R. R. Reekers, 143-1, $77.40; A. I. Saito, 453, $25; C. H. Splinter, 761, $7.50; W. J. Steffen, 142-1, $15; R. D. Switzer, 027, $24.60; H. F. Thompson, 027, $15 (two awards); M. C. Tracy, 027, $25.80; B. White, 059-9, $15.

Employe Suggestion awards for the week ending 1 May:

R. P. Armenta, Dept. 027, $29.30; E. S. Budzinski, 031, $187.70; E. L. Curtis, 170-2, $15; G. A. DeMarino, 250-3, $178.20; L. M. East, 144-1, $99.40; T. A. Eaton, 460, $147.30; J. L. Eiland, 149, $15; D. V. Fox, 149-6, $15; A. M. Goodwin, 027, $15.40; L. A. Horde, 420-6, $15.20; E. Leep, 401-1, $148.40; B. N. Lenten, 149-5, $30; V. H. Lloyd, 149-4, $57.80; J. F. McClure, 027, $35; E. J. McInvale, 031, $187.70; G. A. Paxson, 142-1, $15; S. Persley, 027, $30 (two awards); D. R. Resch Jr., 059-4, $38; M. J. Schipper, 400-7, $15; G. J. Silva, 400-6, $116.40; T. J. Skerritt, 031, $23.50; L. O. Smith Sr., 451, $20.80; D. B. Tatum, 015, $15; J. L. Vidovich, 407, $15.

Rider-Driver

CONVAIR

RIDE WANTED—From National City near 1st and Euclid Ave. to Lindbergh Field plant, 4:30 p.m. to 1 a.m. shift. Call June Wilkins, ext. 1208 LF or (home) 477-8953.

RIDE WANTED — From San Carlos area to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Phone Gene Federer, LF ext. 468 or (home) 276-7469.

Retirements

CONVAIR

BOETEL—Harold J., Dept. 515-0. Seniority date Dec. 23, 1940, retired April 17.

BROWN—Lillian B., Dept. 833-2. Seniority date Jan. 15, 1951, retired April 30.

CHANNELL—Joseph L., Dept. 250-3. Seniority date July 24, 1941, retired April 24.

COUNSELLOR—Jay R., Dept. 979-2. Seniority date Dec. 1, 1958, retired April 24.

DERSHEM—William A., Dept. 142-1. Seniority date Oct. 26, 1954, retired April 17.

DOMBROCK—Harold F., Dept. 250-5. Seniority date March 6, 1956, retired April 20.

FITZMAURICE—Finis R., Dept. 194-0. Seniority date Dec. 15, 1952, retired April 30.

HAMMERSLEY — Marion D., Dept. 810-0. Seniority date Feb. 18, 1957, retired April 30.

HERCHOLD—Walter T., Dept. 731-0. Seniority date Nov. 1, 1937, retired April 30.

KENDALL — Dudley D., Dept. 519-0. Seniority date April 17, 1956, retired April 30.

LANDERS — Alfred H., Dept. 015-0. Seniority date March 1, 1951, retired April 30.

MacLEOD—Kenneth M., Dept. 144-4. Seniority date Dec. 9, 1935.

McCLURE—Earl E., Dept. 731-0. Seniority date Aug. 26, 1953, retired April 30.

OJEDA — Alexander S., Dept. 250-3. Seniority date July 27, 1949, retired April 24.

SALUTER — Philip A., Dept. 979-0. Seniority date June 3, 1957, retired April 30.

STOGSDILL—Amelia R., Dept. 833-2. Seniority date Feb. 20, 1951, retired April 30.

WASHBURN—Leland F., Dept. 019-0. Seniority date April 15, 1947, retired April 30.

WOOLFORD—Walter M., Dept. 045-0. Seniority date July 13, 1939, retired April 30.

ELECTRONICS

LaFLEUR — Philippe J., Dept. 422. Seniority date April 8, 1966, retired May 1.

Personals

CONVAIR

My family and I wish to thank all our good friends at Convair for the flowers, memorial contributions, and expressions of sympathy at the death of my father, A. F. Banke.

O. C. Banke
Dept. 015

* * *

We wish to express our appreciation of love and concern to our friends at Convair who were so thoughtful in our loss of Norman I. Wylie. The beautiful flowers and your gifts to his memorial fund is deeply appreciated.

The Wylie Family

* * *

I wish to express my sincere appreciation to our many Convair friends for their kind expressions of sympathy and flowers upon the death of my husband, Sam.

Margaret Hughes

Births

CONVAIR

FATTA—girl, Karen Elisabeth, April 4, 7 lbs. 6½ ozs. to Joe (Dept. 583) and Karen Fatta.

PILLIFANT—girl, Amber Lynn, April 23, 6 lbs. 5 ozs. to Leo (Dept. 059) and Linda Pillifant.

Deaths

CONVAIR

ATWELL—Walter B., died April 22, retired Jan. 9, 1960. Survived by his wife, Ethel.

GAUGH—Harry E., retired Mar. 30, 1959, Dept. 25. Survived by his wife, Virginia.

HUGHES—Samuel G., Dept. 780-1, died April 22; survivors include wife, Margaret.

LERMER — August, retired June 28, 1963, Dept. 6, died March 26. Survived by his wife Awigeja.

VAN DER MAATEN—J., retired Feb. 28, 1958, Dept. 170, died April 22. Survivors include daughters, Frances Andress, Carolyn Matia.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P. O. Box 1950, San Diego 92112.

General Dynamics is an Equal Opportunity employer.

SLEEK—Samuel B. Winram, director of Arctic transport systems for General Dynamics, stands beside model of proposed 900-foot nuclear-powered submarine tanker. Concept has been advanced as reliable, economical and flexible means of moving oil from Arctic to ice-free North Atlantic ports.

Concept of Submarine Oil Tanker Evaluated For Service in Arctic

A nine-foot scale model of a submarine tanker to transport oil from Alaska's North Slope was unveiled by General Dynamics at the Offshore Technology Conference in Houston, Texas.

The proposed nuclear-powered vessel is currently being evaluated by major oil companies as a reliable, economical and flexible means of moving oil from the Arctic to ice-free North Atlantic ports.

The submarine tanker would be built by Quincy Shipbuilding division in existing facilities.

Samuel B. Winram, director of arctic transport systems for General Dynamics, said that numerous U. S. governmental agencies, including the Maritime Administration, U. S. Coast Guard and the Office of Science & Technology were following the proposal closely. In addition, the Canadian Government had expressed keen interest in this form of arctic transportation.

He added that the submarine would normally cruise at a depth of 300 to 400 feet and would make a typical round trip between the North Slope and its ocean port in about two weeks.

Winram said that studies showed that the submarine would be able to move oil to the U. S. East Coast at costs lower than those attributed to projected pipeline systems.

"Cost comparisons with surface tankers are difficult because they depend on the ability of ships of reasonable cost, to operate through the ice on schedule on a year-round basis at economic speeds," he said.

Pointing out that the submarine would be a minimum hazard to the environment, Winram stressed that it would be operating submerged in a steady 28-degree temperature, fully protected from ice, wind, waves and storms.

An added factor, the General Dynamics executives stated, would be the "submarine's inherent flexibility, which makes it capable of being loaded either on the surface or while submerged and being able to adjust its route as required to service possible new arctic oil discoveries. The same design could be used for both the 170,000-ton tanker and a larger ship up to 300,000 tons."

Winram reported that oil companies were impressed with the design and concept of the subtanker but he declined to predict when a production decision would be made. He said that the total arctic oil transportation situation presents an extremely complex picture.

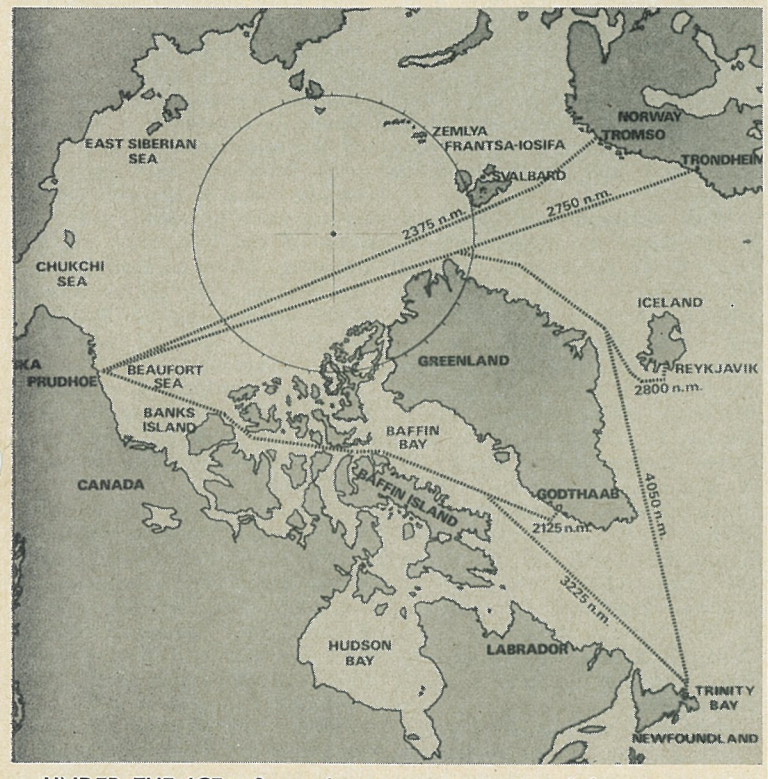
May 28 is Deadline For Savings Change

Employes are reminded that May 28 is the next deadline for enrolling or making changes in the General Dynamics Savings and Stock Investment Plan.

Applications made in May will become effective at start of the third calendar quarter on July 1.

Employes with a year's service or more may enroll 30 days prior to beginning of any calendar quarter. The same deadlines apply to making changes in existing individual plans.

Applications are available from employe services.



UNDER THE ICE—Several routes are proposed for transporting oil from Alaska's North Slope to ice-free ports by submarine tanker. Primary route would be via Northwest Passage.

Atlas-Centaur Role In INTELSAT Told in Mexico Briefing

Two veteran Convair division launch vehicle programs engineers briefed key Mexican governmental and scientific personnel April 28 in Mexico City on role of the Atlas-Centaur in the INTELSAT IV commercial communication satellite program.

The two — Deane Davis, Centaur program manager, and B. R. Foushee, deputy manager of program development for launch vehicle programs, had been invited to give the briefing by Ing. Carlos Nunez, secretary of communications and transportation of Mexico and chairman of the Interim Communications Satellite Committee, governing body of the 75-nation International Telecommunications Satellite Consortium (INTELSAT).

Davis said the Mexico engineers, scientists, and educators attending gave a standing ovation at conclusion of showing of a Spanish-language version of "Go Atlas! Go Centaur!" that had been produced for INTELSAT showings by Convair's motion pictures and TV section.

Foushee and Davis briefed the group on General Dynamics and its divisions and products, history of the Atlas and Centaur, and the Atlas-Centaur role in the INTELSAT program — including a description of trajectories and launch and flight events.

The Convair men also discussed expectations for the space shuttle program and the potential role of space shuttle orbiters in carrying fueled Centaur vehicles and payloads into orbit for later remote launching. (The space shuttle orbiter is expected to have a 15 by 60-foot cargo compartment.)

Be sure to use the ZIP code when addressing mail. It speeds up delivery!

Outstanding 'Crop' Of Students Picked For Scholarships

Seven sons of General Dynamics parents have been selected for National Merit Scholarships sponsored by General Dynamics and will begin four-year terms at colleges of their choice this fall.

In addition, two National Achievement Scholarships sponsored by General Dynamics have been awarded to deserving Negro students.

All nine are presently completing high school and will graduate in June.

Achievement scholars are James C. Brown of Chicago, Ill., who will enter the University of Wisconsin, and Edward L. Weston of Dorchester, Mass. who will attend Dartmouth College. Brown's high school awards included leadership recognition, varied student activity and two varsity letters. Young Weston, the son of Quincy Shipbuilding division's Ernest B. Weston, has held three student offices in high school, edited the school newspaper and earned an excellence in English award.

National Merit scholars, listed by operating unit at which parents are employed:

CONVAIR

Douglas M. Peller, son of Robert C. Peller, engineering design specialist, will attend the University of Southern California, majoring in math. He attended Patrick Henry High, San Diego, with a 3.9 grade point, and not only was active in school affairs but played in the band and earned a varsity letter as well.

ELECTRIC BOAT

David L. Henry, son of the late Elbert E. Henry of EB engineering, will attend Harvard with a probable engineering major. A June graduate of Old Lyme High, Old Lyme, Conn., he earned letters in soccer and basketball, won algebra and geometry awards, and is considered the outstanding young man of his class.

ELECTRONICS-ROCH.

Patrick E. Shareck, son of Everett P. Shareck, budget analyst (U. S. Army ret.), will attend MIT, seeking an aerospace career. An outstanding scholar, he played in the school band and was active in Boy Scouts, attaining the rank of Eagle. (His mother, incidentally, is a microbiologist.)

FORT WORTH

Stephen B. Woods, son of Jack L. Woods, chief of avionics AGE, and S. Kent Sattawhite, son of Lee E. Sattawhite, electronics technician, will both attend Rice University and seek engineering careers. Young Woods academic interests lie in science and mathematics and he has won two scholarship awards. However, he is also an avid sports fan and plays golf regularly. Young Sattawhite concentrates first on his studies but also manages to hold down a part time job, pursue tape recording and photography hobbies, and is learning to fly under his father, a private instructor.

POMONA

Robert Hiroschige, whose father is Kazuyuki Hiroschige, head of advanced dynamic systems section of engineering, plans to attend the University of Chicago and pursue a career in science. A Glendora High senior he has an outstanding academic standing and has been recognized for independent projects in creative science.

Thomas D. Eckstein, son of John D. Echstein, a grinder in tool manufacturing, attends Damien High and plans to enter UCLA where he as yet is undecided whether to concentrate upon mechanical engineering, law or a teaching career in English literature. His interests are varied. He soon will acquire his private flying license, swims and fences, plays the piano, guitar and flute.

Dynamics Scholars Total Over Fifty

General Dynamics is financing the education of more than 50 young men and women who currently are attending college at various institutions across the land.

Forty-one are attending with the help of Merit Scholarships and 12 with the aid of Achievement Scholarships, all granted in past years.

Kansas City Earns Praise From Navy

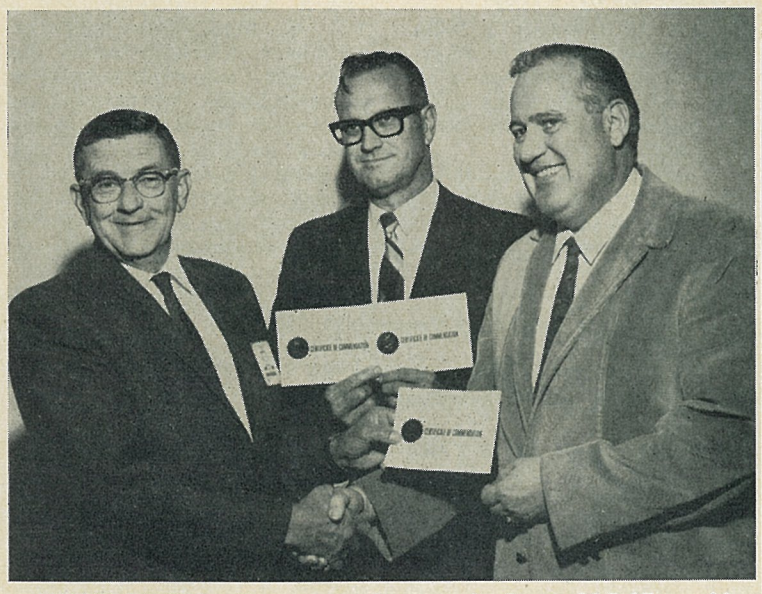
Described as an "exceptionally well-built ship," the new oiler-supply ship USS Kansas City has been delivered to the U.S. Navy by the Quincy Shipbuilding division and is now being readied to join the fleet.

Kansas City, fourth in the Navy's new class of replenishment fleet oilers to be built at Quincy, was delivered May 1 at Boston Naval Shipyard.

She was the second ship delivered to the Navy by the Quincy Shipbuilding division in two months.

GATHERING IN NYC—Air Force officers in "Education with Industry" program, assigned to General Dynamics divisions, paid visit to New York Headquarters recently for briefings with Douglas Caldwell, management development administrator, as host. Front row: Lt. Col. E. Marvin Kuebler (San Diego); Douglas Caldwell (General Dynamics); Lt. Col. Gerald Turner (Fort Worth). Back row: Capt William S. Druyun (Fort Worth); Edward Squires (management intern); Capt. James Sullivan (San Diego); Bruce Nielson (management intern); Maj. John McCormack (Fort Worth); Maj. Marvin Spallina (San Diego); and Maj. Donald Jones (Fort Worth).

KUDOS—Electronics-SD groups received recognition for top performance recently. In photo at left, first quarter Zero Defects banner goes to SGLS assembly group that improved performance by 42 per cent. D. C. Prim, general manager, offered congratulations. Center photo: Prim presented desk pen sets and award certificates to superior craftsmen during luncheon at Kona Kai. Photo at right: REINS assembly personnel received second consecutive ZD Sustained Performance Award for maintaining record low of fewer than three defects per 100 manhours during past year.



VALUE SAVERS—Two group foremen in Dept. 015 LF machine shop were recognized recently for value control projects which generated $1,229,600 savings. W. J. Durflinger, center, and Bob Burns, right, received certificates of commendation from Frank Blair, LF factory manager. One VCP called for tumble burring of small parts while the other related to an etching process in lieu of blending and polishing certain parts by hand.

Chrysler Corp. Visitors Briefed On Convair Space Shuttle Study

Two executives from Chrysler Corp.'s space division — H. D. Lowrey, president, and V. J. Vehko, director of engineering—were at Convair's Kearny Mesa plant May 4 for a briefing on the division's space shuttle study activity.

Dr. Donald Dooley, Convair vice president-space programs, said the presentations and discussion supported negotiations relative to Chrysler's potential role as a Convair subcontractor for the Phase B space shuttle study.

"Their role, if a subcontract is negotiated, will be in manufacturing planning and related quality assurance and ground-test activities," he said.

Dooley also announced that Holmes and Narver, a Los Angeles-based architectural and engineering firm, will work as a Convair subcontractor during Phase B if the North American Rockwell-Convair team is awarded a contract from NASA. Their assist will be in the ground support facilities engineering area.

Frank Lucas, Convair purchasing agent, said Holmes and Narver will prepare candidate predesigns of runway complex, maintenance hangar, launch pad, and structural test facilities.

Lucas said the work by Holmes and Narver personnel would be accomplished both in Los Angeles and at the Kearny Mesa plant.

NASA is expected to award two or more Phase B preliminary design contracts next month.

Exhibits Due Monday From Supplier Firms

Eighteen supplier firms will exhibit casting, fastener, forging, injection-molding, lamination, machining, seal, and welding capabilities and products from 11 a.m. to 3:30 p.m. Monday (May 18) in the Lindbergh Field cafeteria.

CHRYSLER CONFERENCE—H. D. Lowrey, president of Chrysler Corp. space division, seated left, and Dr. D. A. Dooley, Convair vice president-space programs, discuss Phase B space shuttle activity. Looking on, from left, are Wayne Pence and Davy Jones of Convair; V. J. Vehko, Chrysler director of engineering; and R. W. Keehn of Convair. Chrysler division may serve as Convair subcontractor on Phase B study.

Tech Rep's Dogged Detective Work Solves Mystery of Lost 106 Canopy

A Convair F-106 Delta Dart from the 1st Fighter Wing at Hamilton AFB, Calif., was at 7,000 feet just south of Petaluma, Calif. on a recent morning mission when the canopy broke loose and the pilot found himself in an open cockpit.

The plane returned to Hamilton where Jim Day, Convair field service representative with the wing, Lt. Col. Harold Bingaman, chief of maintenance, and F-106 flightline personnel tried to determine what had caused the mishap.

After usual tests produced no result, Day, who has been associated with F-106s since they were "born" 11 years ago at Convair division, concluded bolts holding the canopy to the aircraft could have failed. The missing canopy, recovered later from a pasture, confirmed his belief.

Every F-106 canopy at Hamilton was checked without finding faulty bolts. However, an EUR (Emergency Unsatisfactory Report) was sent to other F-106 units requesting a check for possibly defective bolts.

Defective bolts were found in a number of planes at Tyndall AFB, Fla., and at Selfridge AFB, Mich., and Langley AFB, Va. All were replaced, eliminating the possibility of mishaps.

Day's thorough knowledge of the aircraft may have resulted in considerable material cost saving for the Air Force.

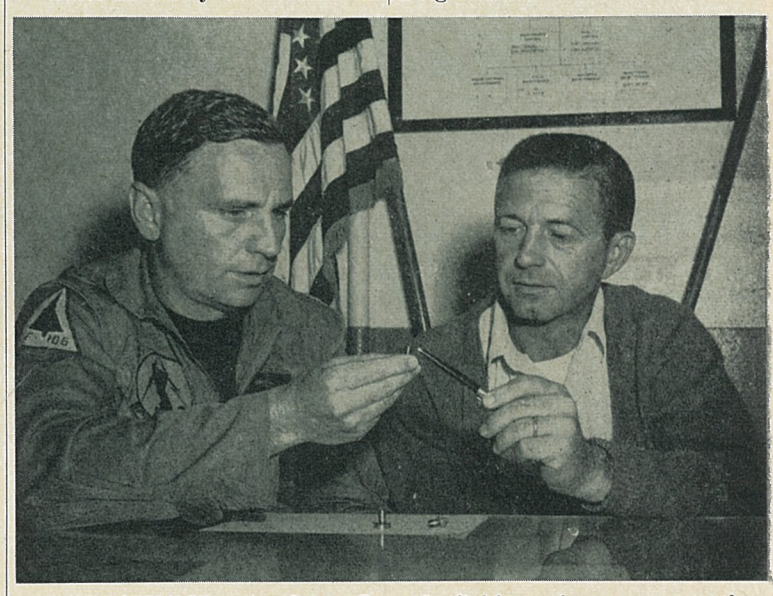
"Tech reps like Jim Day are invaluable to the fighter units," Col. Bingaman said later. "Air Force maintenance men have become so specialized there aren't many left with 'nose to tail' knowledge of the aircraft. That's where men like Jim Day come in. He can give us guidance on all aspects of the F-106."

Day, one of 29 Convair customer field service representatives around the world, spent 10 years as an Air Force jet aircraft mechanic before joining the division and has worked on almost every single-engine jet in the AF inventory.

"If I couldn't be around aircraft, I'd be completely lost," he comments.

At Hamilton AFB, Day has a close working and personal relationship with the flight crews and has become familiar with individual tendencies of every F-106 on the line. He keeps the flight and maintenance crews "up" on latest changes and works closely with the maintenance chief to maintain a good operational readiness rate.

"Since Mr. Day has been with us, it has become practically an everyday thing for him to save us time, lives, and money," Col. Bingaman said.



FIELD SERVICE—Jim Day, Convair field service representative, right, points out flaw in bolt to Lt. Col. Harold Bingaman, chief of maintenance for 1st Fighter Wing.

Division Joins In Cleanup Effort

Convair will participate in a cleanup contest being conducted as part of a county-wide cleanup campaign next week under auspices of the fire safety committee of the San Diego Chamber of Commerce and the local War Against Litter committee. A trophy will go to the winning organization.

Fire Marshal Hugh Rae, who is spearheading the division effort, has asked all employes to participate in the campaign to help make Convair and San Diego County a showplace of cleanliness and as an aid in prevention of unnecessary fires.

Customer Service Team Earns Unstinting Praise for Skill

O. W. Harper, Convair division's manager of customer service, reports all 29 of the division's Dept. 058 field service representatives with customer organizations in 14 states and several foreign countries have received letters of commendations and awards for service "beyond the call of duty."

Their assignments and duty stations are as diverse as technology incorporated into the aircraft they represent.

Three of the field reps—P. D. Weaver, A. H. Bedle, and R. J. Moore—are with U.S. Army units in Southeast Asia.

Serving with commercial aircraft firms are Mel Clause in Zurich, Switzerland, H. M. Bombach in Kansas City, Mo., J. R. Crenshaw in Houston, R. H. Detwiler in Miami, and H. I. Morgan in New Jersey.

Overseas with U.S. Air Force units are L. D. Harris and W. F. Kemp in Turkey, J. A. Myrann in Iceland, and H. R. Smith in Greece.

With stateside AF units are W. R. Boughey, Minot AFB, N. Dak.; C. C. Broadwater, Tyndall AFB, Fla.; J. W. Day, Hamilton AFB, Calif.; C. H. Duffell, Kingsley AFB, Ore.; L. M. Goodloe, Langley AFB, Va.; E. M. Gross, Handcock Field, N.Y.; R. L. Hart, McChord AFB, Wash.; C. H. Marier, Duluth, Min.; R. L. Matthews, Loring AFB, Maine; W. H. Moffett, Griffiss AFB, N.Y.; Floyd Pratt, Wurtsmith AFB, Mich.; E. T. Schaechterle, McChord AFB, ash.; G. S. Schendel, Ent AFB, Colo.; C. W. Stevens, Malstrom AFB, Mont.; J. F. Sylvia, McClellan AFB, Calif.; F. H. Weaver, Dover AFB, Del., and V. O. Weese, Kelly AFB, Texas.

Hart was commended for outstanding past service with the 10th Air Force in a recent letter of recognition from Col. William R. Caylor, director of maintenance.

Matthews has been commended in recent letters from Maj. Gene C. Pettit, quality control officer, and Lt. Col. Francis Burkhardt, chief of maintenance, 27th Fighter Interceptor Squadron, Loring AFB, Maine.

Maj. Pettit said one of Matthews' greatest attributes is his thorough problem searching and his patient manner when instructing young airmen which has created professionalism in the squadron.

"I have personally seen him come up with the answer to a major aircraft accident when the experts from Depot had given up," he said.

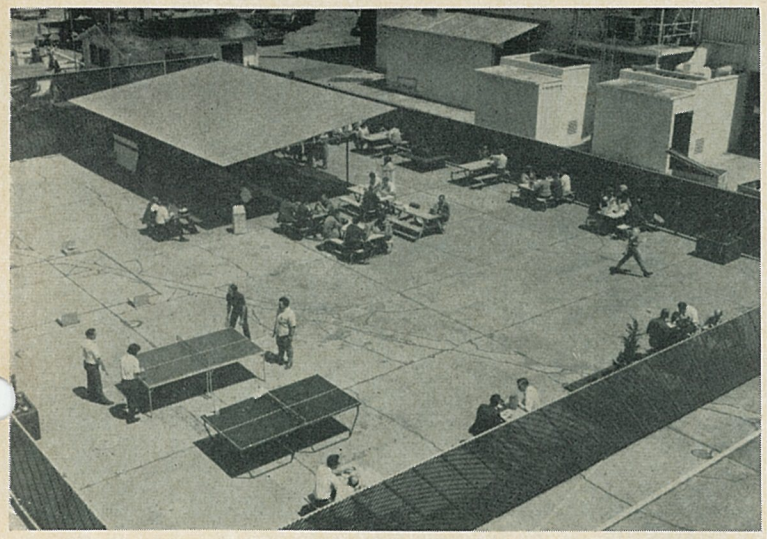
"In my 15 years in the Air Force I have never met anyone who more sincerely fosters the image of his company and the well being of the United States Air Force. It is indeed a pleasure and a comfort to have Mr. Roger L. Matthews a member of this squadron."

Col. Burkhardt said the squadron has had a 50 per cent personnel turnover in three years because of the Viet Nam war but has been able to perform its mission without interruption because of the outstanding job Matthews has done in training newly arrived personnel.

Weaver received a certificate of recognition last year for meritorious service to the 95th Fighter Interceptor Squadron at Dover AFB, Del.

Lt. Col. Roy L. White, commander, said Weaver's "extensive knowledge of the F-106 aircraft, his dedication to his responsibilities, and his willingness to serve at all times whenever needed have far exceeded the performance normally expected of a contract field representative."

Harper said letters commending almost all the field representatives have cited their abilities to detect problems and provide "first-class training" for maintenance technicians.



EXTERIOR DECORATING—Electronics-SD recently refurbished and enlarged outdoor lunch area behind Bldg. 51, LF, which features table tennis, washer games, new tables, planters and shrubs. Lunch wagon is open daily 11 a.m. to 12:30 p.m., serving hot and cold lunches.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 KM. Deadline for next issue of GD/NEWS is May 19. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

ADVENTURERS — Annual Equipment Show, 7:30 p.m., May 20.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BALLROOM DANCING — Beginners dance class schedule 7:30-9 p.m., Mondays, starting May 18.

BICYCLE CLUB—Otay Mesa 50-mile ride, 7:30 a.m. May 23 from B of A parking lot in Spring Valley.

BRIDGE—Duplicate bridge, 7:30 p.m., Fridays.

CAMERA CLUB — Palm Springs field trip, May 17. Meet 9:30 a.m., desert station.

CERAMICS—Meet Tuesdays and Thursdays, 9 a.m. to noon and 7-10 p.m.

CHORUS—Rehearsals, 7:30 p.m., Mondays.

CHESS—Play 7 p.m., May 20.

COUNTRY & WESTERN MUSIC — Meet 7:30 p.m., Thursdays, CRA Missile Park picnic shelter.

DELTA DIVERS—Meet 7:30 p.m., tonight (May 13).

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB—Potluck 6:30, meeting 7:30 p.m., May 19, Gillespie Field Clubhouse.

GOLF — Whispering Palms, Management Club tourney, May 23.

GUN CLUB—IRC trap and skeet shoot May 31.

HEALTH CLUB—Open 9:30 a.m.-10 p.m. Monday through Thursday, 9:30 a.m.-9 p.m. Fridays, 10 a.m.-5 p.m. Saturdays; "Women only" weekdays 9:30-11 a.m.

ICE SKATING—GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1.00 (includes skates).

JUNIOR SCIENCE — Meeting 7:30 p.m., May 15.

MINIATURE RAILROAD—Work sessions each Wednesday, 7 p.m., CRA Missile Park.

PISTOL CLUB — Shoot, 9:15 a.m., May 24, San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB — Meeting 7:30 p.m., May 21.

RIDING CLUB—Meeting, 7:30 p.m., tonight (May 13).

RIFLE CLUB — Senior shoot 7 p.m., May 13. Junior shoot 9 a.m., May 16. Gillespie Field Range.

ROCKHOUNDS — Meeting 7:30 p.m., May 13.

SCULPTURE—Workshop sessions 7:30-10:30 p.m., Mondays.

SPORTS CAR CLUB — Meeting 7:30 p.m. tonight (May 13). Photorama 10 a.m., May 17.

SQUARE DANCE — Dance 8-10 p.m. Thursdays.

STAMP CLUB—Meet 7 p.m., May 14.

SWIMMING—Family swim night May 16, 7-9 p.m., Mission Beach Plunge. Tickets at employe benefits outlets.

TABLE TENNIS—Friday night league, 7:30 p.m. Play 10 a.m.-4 p.m. Saturdays.

TOASTMASTERS — Convair Toastmasters meet each Wednesday, 4:30 p.m. Dynamic Toastmasters meet Thursdays, 5:30 p.m.

TRAIL BIKE — Meeting 7:30 p.m., May 14. Indian Flats outing May 16-17.

TROPICAL FISH—Meeting and workshop May 18, 7:30 p.m.

TRAILERS — Memorial Day weekend campout at Lazy K Ranch.

WOMENS GOLF—Mission Bay tourney, June 13, 9:30 a.m. tee-off.

CRA Coin Club Installs Officers

Bob Wahler was installed as new president of the CRA Coineers Club at a banquet April 18 in the Town and Country Hotel attended by 43 members and guests.

Other officers installed were Gael Dewey, vice president; Maxine Kinder, secretary, and Harry Jennings, treasurer. Al Baber was master of ceremonies and Vince Bacon was installing officer.

Paul Hamm, guest speaker, recalled some favorite stories and experiences in coin collecting.

Steve Ames, outgoing president, was given a desk pen set with gavel. Trophies for exhibits went to Chuck Wiley for his display of "U.S. 5¢ Nickels," first; Bacon for his "The Many Faces of Libtry," second; and Ed Raymond for his "Lincoln Cents—1909 to Date," third.

Tram Ride Planned For Camera Fans

A Palm Springs tram ride and field trip will take the place of the regular CRA Camera Club meeting on Sunday, May 17.

Club members will meet at Palm Springs desert station at 9:30 a.m. and ride the tram up Mt. San Jacinto, where they will enjoy a picnic lunch and leisurely hike to Hidden Lake.

For information call Bill Paine, ext. 2150 LF.

Barber Swings Low In VAFB 'Classic'

Denny Barber of Convair's Dept. 985-1 at Vandenberg AFB had lowest net 77 in last month's seventh annual VAFB Industrial Golf Classic at Rancho Maria. Other Convair men playing were V. C. Cardiel, H. E. Pickett, A. M. Moore, S. F. Lopez, J. Sekishiro, J. Copeland Jr., C. J. Bush, and W. L. Simonson.

1,250 Attend Club's Annual Rose Show

Garden and flower fanciers, 1,250 strong, turned out for CRA Garden Club's annual Rose Show last month in Balboa Park.

Over 330 exhibits in four major categories of roses, arrangements, corsages, and children's entries were displayed in the Floral Association Bldg.

According to Co-Commissioner Everett Henderson, competition for the annual show was keen and judging difficult.

Prizes went to best of show winners, and first prize winners in each category. Additionally, runners-up and third place finishers received awards.

GOLFER'S DREAM — Manny Gonzales, Dept. 840 supervisor, shows trophy received for ace fired on 18th hole of Sam Snead Tecolote Canyon course. Hole-in-one, Gonzales' first in 35 years of play, a perfect 8-iron shot, came during Management Club twilight league play.

Electronics Club To Hear Alworth

Tonight (May 13) is "Sports Night" for Electronics-SD Management Club members and guests.

Lance Alworth, wide receiver for the San Diego Chargers and premier pass catcher in pro football, will speak.

Tickets, at $3.50 each, are still available from club boosters for the meeting at Holiday Inn (Downtown Tower).

Social hour gets under way at 5:30 p.m. Dinner will be at 6:30 followed by the program at 7:30.

A question and answer period will follow and a raffle will be held.

Douglas Downs Convair Team

Thirty-nine golfers turned out for the second annual Convair-Douglas DC-10 golf tourney last month at the San Carlos links.

Douglas wound up the winner for the second straight year firing 1,521 gross to Convair's 1,548. Net scores were 1,117 for Douglas and 1,196 for Convair.

Top individual gross scores were Wayne Goldier (80) Douglas, J. J. Swarts (81) Convair, and L. Williams (83) Convair. Low net leader was R. H. Trussell of Douglas with 69.5. Swarts and J. F. Daniels Jr., Douglas, were runners-up and J. B. Devine of Douglas finished third.

Prizes and token trophies went to individual winners while a "losers trophy" was reluctantly accepted by Jack Hurt, DC-10 program manager, for the Convair team.

Adventurers To Show Gear

A wide variety of camping equipment will be on display when CRA Adventurers Club holds its annual Equipment Show May 20 at 7:30 p.m. in the CRA Clubhouse auditorium.

Three "typical camps," outfitted by club members, will be on exhibit, showing what is needed for a summer backpack camp, a car camp, and a winter camp.

There will be special exhibits of off-road vehicles and commercial displays of boats, tents, trail foods, and backpacking gear.

Club trips into Southern California, Arizona and Mexico will be the subject of a thirty minute slide show.

The public is invited and admission is free.

Joan Sjoblom Tops In Women's Golf

Joan Sjoblom took first place honors in the General Dynamics Women's Golf tourney last month at Rancho Bernardo.

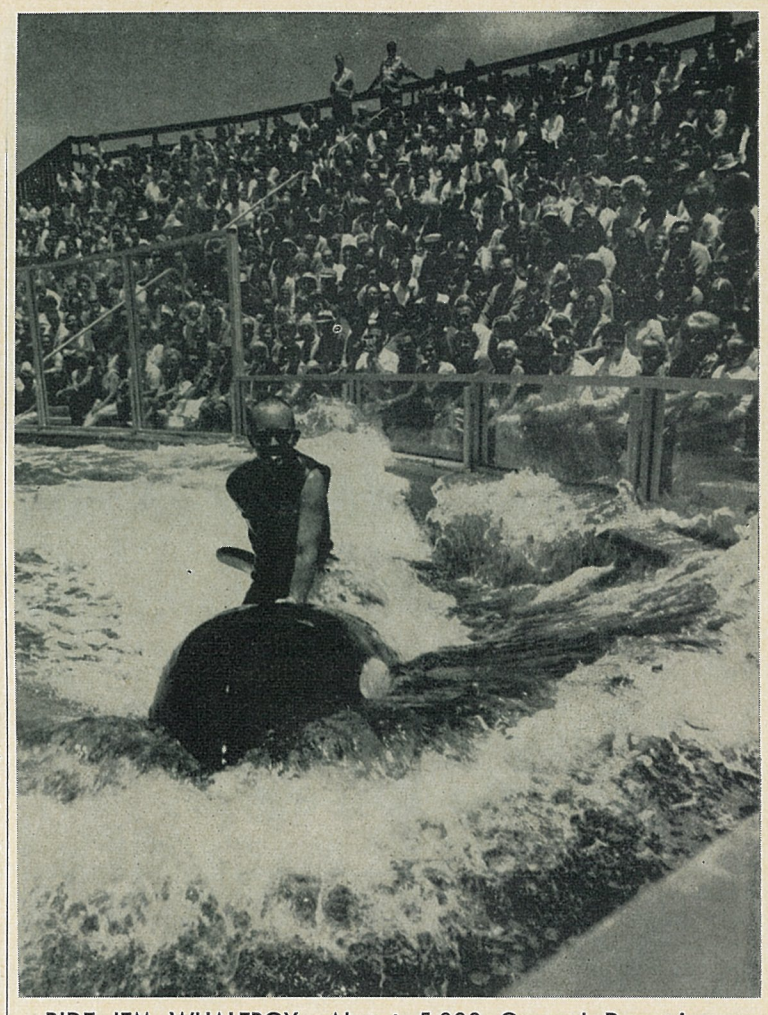
Jeannine Letzring was runner-up and Freda Magargal placed third. Closest to the pin on par 3 holes went to Ilene Wilson, and Mable Humphries had longest drive. Golf ball door prizes were presented to Mable Humphries, Vi Nye and Nell Bartlett.

GD girls will challenge the Mission Bay course June 13, with tee-off time set for 9:30 a.m. All women golfers are welcome. For information call Freda Magargal, ext. 2933 KM.

Gun Club to Host IRC Skeet Shoot

CRA Gun Club will host an Industrial Recreation Council (IRC) trap and skeet shoot May 31 at the Gillespie Field range. Members of gun clubs from several local industrial firms will be participating.

Convair division employes and family members may make reservations for the shoot by calling W. U. Gatterman or Dick Blommer, ext. 1861 KM. Deadline is May 18.



RIDE 'EM WHALEBOY—Almost 5,000 General Dynamics employes and family members saw trainer Jim Richards ride Shamu the killer whale last year at Sea World. Reduced-price tickets are available now for admission on June 6 and 7.

CRA 'Day at Sea World' Tickets Now Available

General Dynamics families will enjoy the third annual CRA-Sponsored "Day at Sea World" at reduced prices June 6 and 7.

Tickets for admission to the 70-acre marine-life entertainment park — plus one special ride — will be good either of the two days and will be $2 for adults and $1 for 5-through-17-year-old youth. Children under 5 are admitted free.

George Schmiedel, Convair division supervisor of recreation, said the reduced prices represent a saving of $1.85 for adults and young people and of 85 cents for children 5 through 12.

Tickets are available through all CRA and employe benefits outlets and Convair Management Association boosters.

Those attending will have their choice of a ride on the only commercially-operated fleet of hydrafoil boats on the West Coast, the longest overwater skyride in the country, or a 320-foot skytower providing a panoramic view of San Diego.

Shows and exhibits covered by the regular admission include:

An underwater show with the sea maids of Sea World performing with dolphins, seals, and a cormorant.

Dolphins starring in a special show in an ocean lagoon adjacent to lagoon stadium.

Shamu, the world's first trained killer whale, allowing her "doctor" to examine and ride her.

Sea lions who get "married," a roller-skating penguin, piano-playing ducks, and El Google (the world's only trained elephant seal) in a show in the seal and penguin arena.

The world's largest indoor lighted and orchestrated fountain display.

Ama girls diving for pearl-bearing oysters and Japanese Kabuki dancers performing on a floating stage.

Several of the best salt-water aquarium and sea grotto displays in the U. S. as well as fresh-water, tropical river, and seal and sea lion pools and tanks with varied marine life collections.

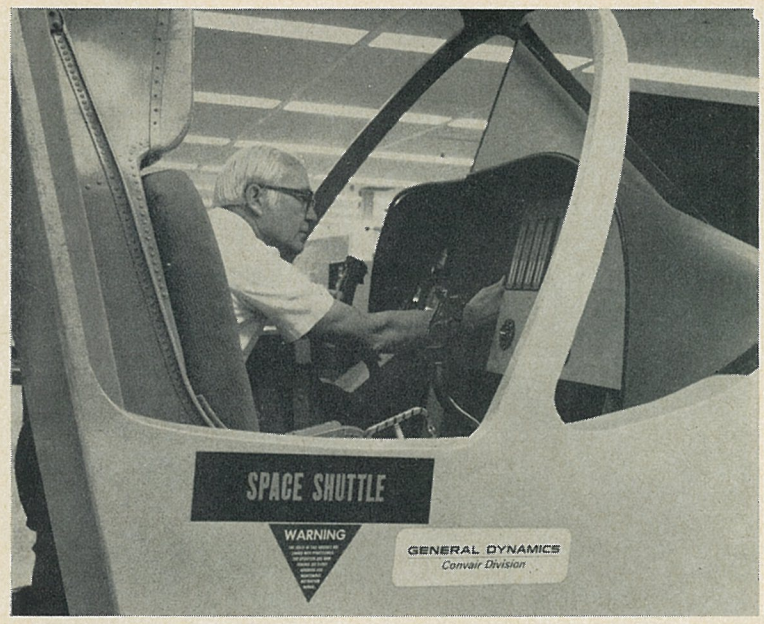
Whispering Palms Golf Meet Planned

A spring golf tourney sponsored by Convair Management Association is slated for May 23 at Whispering Palms.

Entry fee is $6 and registration deadline is May 20. Entry includes greens fee, prizes and special events. Golf carts will be available.

Starting times may be reserved by calling Terry Kell, tournament director, ext. 2418 LF.

DUBIOUS HONOR—In accepting "losers trophy" from J. F. Daniels Jr., left, Douglas resident manager, following annual Douglas-Convair golf match, J. B. Hurt, Convair DC-10 program manager, said he hopes to return trophy next year on theory it's "better to give than receive."



SPACE SHUTTLE—S. O. Atwood, senior electronic engineer, works in preliminary mockup of space shuttle cockpit.

Lab Facilities Called Upon For Shuttle Research

Extensive laboratory and test facilities at Convair are being mobilized for future work on the space shuttle program.

Fourteen labs and facilities have already engaged in shuttle related work or will begin preliminary planning during Phase B. They are Simulation, Data Displays, Crew Performance, Aerospace Medicine, Liquid Hydrogen Test Site, SEAR facility, Mechanical Properties, Advanced Materials, Weld Process Development, Data Acquisition, Electromagnetic Compatability, Low Speed, High Speed and Hypersonic Wind Tunnels.

Six other labs, Electrical Test, Hydraulic Test, Pneumatics Test, Mechanical Test, Vibration Test and Structures Laboratory would be used primarily in the hardware phases.

Dynamics engineers will use the Simulation lab to simulate flight characteristics of the space shuttle booster vehicle through the atmospheric regime, using a cockpit mockup.

The Simulation lab also provides a means for engineers in Data Displays and Crew Performance to develop the most favorable cockpit display configuration.

The system may require electronic rather than mechanical cockpit displays. Instead of an altimeter in the cockpit, for example, the altitude would be displayed on a TV-like screen.

The basic crew display-control requirements would be defined by Crew Performance and then translated into hardware and software systems in Data Displays.

To optimize the man-machine interface, Crew Performance will also take a physical environment and define crew tasks, work-rest cycles, and vehicle interior design.

Aerospace Medicine researchers define the physical environment with which Crew Performance works. They are responsible for examining environmental, metabolic, and physiological requirements of the crew during nominal and off-design conditions.

One of the major problems facing space shuttle designers will be the heat generated by re-entry. Since a quick turnaround time for vehicles is essential, ablative materials, which are partially consumed during re-entry, may not be practical as heat shields because of replacement cost and the time required to replace them after each flight. Consequently, a search is on to find a high temperature radiative heat shield material which need not be replaced after each flight.

Re-entry material tests have already been conducted in Mechanical Properties Research and Advanced Materials labs and at the Liquid Hydrogen Test Site and the Simulated Environmental Aerothermodynamic Research (SEAR) facility.

Mechanical Properties and Advanced Materials researchers, working in conjunction, are evaluating silicide columbium alloys and nickel-cobalt super alloys. They have exposed small test specimens to temperature profiles up to 2,700°F under tensile loads in simulated re-entry exposure tests.

The more promising materials are made into larger structures and tested by technicians and engineers at the Liquid Hydrogen (LH) test site and the SEAR facility.

A cryotherm test facility at the LH site can expose a 32-inch square test specimen to a 3,120°F temperature differential. Hardware up to 4 inches thick can be accommodated.

Re-entry environmental effects on 18-inch square simulated thermal protective panels are also evaluated at the SEAR facility which provides low pressure combustion with subsonic channel flow using various gases for combustion.

Supporting SEAR and the Liquid Hydrogen Test Site is the Data Acquisition lab where equipment and techniques are devised for recording and analyzing data. A land line connection between the test facilities and the data station make possible remote test control and real time data evaluation.

The heat problem has also been taken up by researchers in the Welding Process Development lab where they have done work on the forming and welding of heat shield sections and high temperature metals.

During Phase B, Electromagnetic Compatibility Laboratory personnel will work to devise a plan to monitor all systems to determine compatability.

Instruction Slated For Racquet Novices

CRA Tennis Club will conduct a 10-week beginners course from 10 to 11 a.m. Saturdays beginning May 23 on the courts adjacent to missile park.

The course will be open to all General Dynamics employes and family members. Cost of $3 will cover practice balls and tournament trophies. Phone Bob Herold, ext. 2360 KM, or Inez Schurr, ext. 1111 KM, for details or enrollment.

Divisions' Work With Composites To Be Featured

Composite - materials development and advanced application by Convair and Fort Worth divisions will be featured in technical presentations and a General Dynamics' exhibit at the Air Force Materials Symposium '70, May 18-22 in Miami Beach.

P. D. Shockey of Fort Worth division will discuss engineering data and design criteria in a specialists' section on composites. J. R. Blacklock of Fort Worth will describe advanced composite-materials horizontal stabilizer technology and James Ashton, also of Fort Worth, will discuss composite - materials fuselage structures.

J. David Forest of Convair will serve on a panel on spacecraft structural materials, Robert Anderson of Convair on a panel on non-destructive testing, and Abe Hurlich of Convair on a panel on the role of thermo-mechanical processing of aerospace materials.

Jack Punty of Convair will give a presentation on "Thermo-structural design options using contemporary materials." William Hay and Oscar Thompson of Fort Worth will have a paper titled "The correlation '?' between surface finish and fatigue life as applied to machined aircraft surfaces — aluminum and steel."

The Corporate exhibit, designed by Jack Davis of Convair's art and editorial section, will picture composite-materials developments and applications by the two divisions. Superfloc, a Convair-developed cryogenic tankage insulation, also will be shown and described.

Six Individuals Given ZD Awards

(Photo on page 4)

Six Zero Defects Craftsmanship award winners from Electronics-SD were honored recently for outstanding individual performance.

R. H. Nicholson, manager of quality control, singled out Kathy Sisson, E. E. Brundege, A. R. Castillo, F. Frost, L. J. Gaber, and P. J. LaFleur as recipients.

Winning his second award, Brundege, an engineering R. & D. technician, was cited for outstanding performance during the PROMPT mail tracer program.

Castillo, a financial analyst, was commended for his error free performance in the accounting department.

An electronics development technician, Frost was nominated because of outstanding workmanship on radar programs.

Gaber, planning and control specialist, was named for excellent performance in revising the Task Assignment Plans and establishing the Task Assignment committee.

A lathe machinist, LeFleur was praised for error free performance in maintaining exotic materials.

Superior workmanship on the SGLS and F-111 programs was credited to Mrs. Sisson, an electronics assembler.

D. C. Prim, Electronics - SD general manager, paid tribute to winners at a Kona Kai luncheon where each received commendation certificates and desk pen sets.

Travelers Planning Campout at Ranch

Convair Travelers Trailer Club will spend the three-day Memorial Day weekend (May 29-31) on a campout at the Lazy "K" Ranch on Highway 71 about 17½ miles east of the Highway 395 junction.

Club members will be given a special rate for the weekend of $5. Potluck dinners and group breakfasts are scheduled. Phone Virgil Marshall, commissioner, 222-2658, or Tom Liles, 276-3521, for additional details.

DIALOGUE—A. G. Daubert, Electronics division general manager from Rochester, left, chats with D. C. Prim, Electronics-SD manager, right, and R. L. Williams, Electronics-SD Management Club president, before speaking to 200 club members in Bahia Hotel.

Electronics Division's Sales Volume up in '69

(Continued from Page 1)

fore a product goes into production status.

"This, of course, means that many of the programs that were being looked at will move out in the 'time frame,'" he commented.

Daubert said there will be some reduction in force in the Rochester operation to maintain competitive posture but that a "positive course of action" will be taken to heighten the division's ability to maintain a favorable business outlook.

Overall division objectives for the year include:

1. Review at all operational levels budget objectives of awards, sales dollars, and profit dollars.

2. Definitize product areas and interrelationships with proper delegation and responsibility to carry out the major financial goals of the division.

3. Determine and effect a cohesive organization with no duplication so that forward rates may be obtained.

4. Definitize and pursue major marketing objectives with enough lead time so a complete and thorough job may be done to assure competitive status.

5. Implement a system of overall control within activities to maintain absolute control over expenditure to budget and to schedule performance.

"I don't feel we should be either pessimistic, discouraged, or gloomy," Daubert commented. "I actually feel just the opposite — that we should view this as a real challenge to use all of our management skills in order to make a tight, highly competitive business division so that we can absolutely maintain our posture within the industry."

Cal Franklin, Management Club secretary, was presented a certificate for completion of a National Management Association executive officers' training program by D. C. Prim, Electronics-SD general manager.

Ballroom Dancing Course to Start

A ballroom dancing class for beginners will be held 7:30-9 p.m., Monday evenings, starting May 18 at CRA Missile Park picnic shelter.

Bob McGlade, professional instructor, will teach fox trot, waltz, swing, cha-cha, rhumba, tango and samba.

Registration will be accepted at the first two class sessions. Cost is $18 per couple for the 12-week course.

For additional information, call CRA Commissioner Royce Riggan, ext. 1438 LF or (home) 420-3775.

New Hours Decreed For Library at LF

New hours have been established for the Lindbergh Field engineering library as part of a division-wide effort aimed at reducing operating costs.

The library will be open 8 a.m. to 4:45 p.m. Mondays, Wednesdays, and Fridays. Tuesdays and Thursdays, hours are 12:45-4:45 p.m.

The change, however, does not affect the Kearny Mesa library schedule — 9:45 a.m. to 4:45 p.m., Monday through Friday.

Tickets Available For Spring Dance

About 750 are expected to attend Convair Management Association's spring dance at 8 p.m. Saturday (May 16) in the Mission Bay room of the Bahia Hotel.

Tickets are still on sale at $5.75 per couple through Management Association boosters. Reliability control is sponsoring department.

Music will be provided for dancing until 1 a.m. by Chrit Connie and his 10-piece orchestra. Dress will be informal.

Buffet-style refreshments and hors d'oeuvres will include turkey, ham, and beef sandwiches, spiced hot meatballs, little-pig sausages, deep-fried scallops, and miniature chicken drumsticks.

Prizes in a raffle to raise funds for the association's scholarship fund will include two trips to San Francisco. Door prizes will include sets of dishes and stainless-steel silver settings.

Schneider Leader In Masters Class

Masters class marksman Roland Schneider fired a 298-8x to top Jim Halfacre's 289-9x in recent CRA Pistol Club competition.

In expert class Jerry Lehrer's 283-8x brought him honors over Charles Kropp's 279-9x. Ron Cole with 252 won the sharpshooter competition.

Short National winners were Warren Walker, 283; Schneider, 279; Halfacre, 275; and Harry Black, 274.

All matches are held at the S. D. police pistol range with next match set for 9:15 a.m., May 24.

Jeffries to Head Internal Auditors

Robert K. Jeffries, a senior internal auditor in Convair division's Dept. 199-0, has been elected president of the San Diego chapter of the Institute of Internal Auditors for the coming year. He will be installed at the May 15 meeting.

Darwin J. Sweeney, also a senior internal auditor in Dept. 199-0, was elected to the chapter's board of governors for a two-year term.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 23, No. 10 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, May 27, 1970

Convair Enters Prototype Phase Of A-X Contest

Convair division of General Dynamics has received from the Air Force a "Request for Proposal" in the prototype development phase of the A-X specialized close air-support aircraft.

Proposals are due for submission by early September.

W. W. Fox is heading the Convair proposal effort as program director.

Also receiving RFPs were Beech Aircraft, Boeing Co., LTV Aerospace, North American Rockwell, Textron, Inc., Cessna Aircraft, Lockheed, McDonnell Douglas, Northrop, Grumman and Fairchild Hiller.

Following evaluation of proposals, the Air Force said that contracts will be awarded to two companies for a competitive development phase that will last approximately 26 months.

If approved for production, the A-X will be a rugged, twin-engine, single-seat aircraft, optimized for close air-support of the Army. It will have short takeoff and landing characteristics, high maneuverability, capable of varied payloads and long loiter times. In addition, it will be the first Air Force aircraft planned from the start with high survivability against ground fire as a primary objective.

The A-X program is managed by the A-X Systems Program Office of the AF Systems Command's Aeronautical Systems Division, Wright-Patterson AFB.

In proposal preparation Convair will be drawing upon extensive experience with this type of airplane, dating back to 1964 in developing what became the "Charger" counter - insurgency prototype, as well as a contract awarded in 1967 for concept formulation studies of the A-X. At that time, Grumman, Northrop and McDonnell aircraft also participated in the contracted studies.

Meal Ticket Winners Named

Winners of free meal tickets in the first two of five weekly drawings for Convair division employes submitting Employe Suggestions have been announced by E. D. Heller, manager of cost reduction and value control.

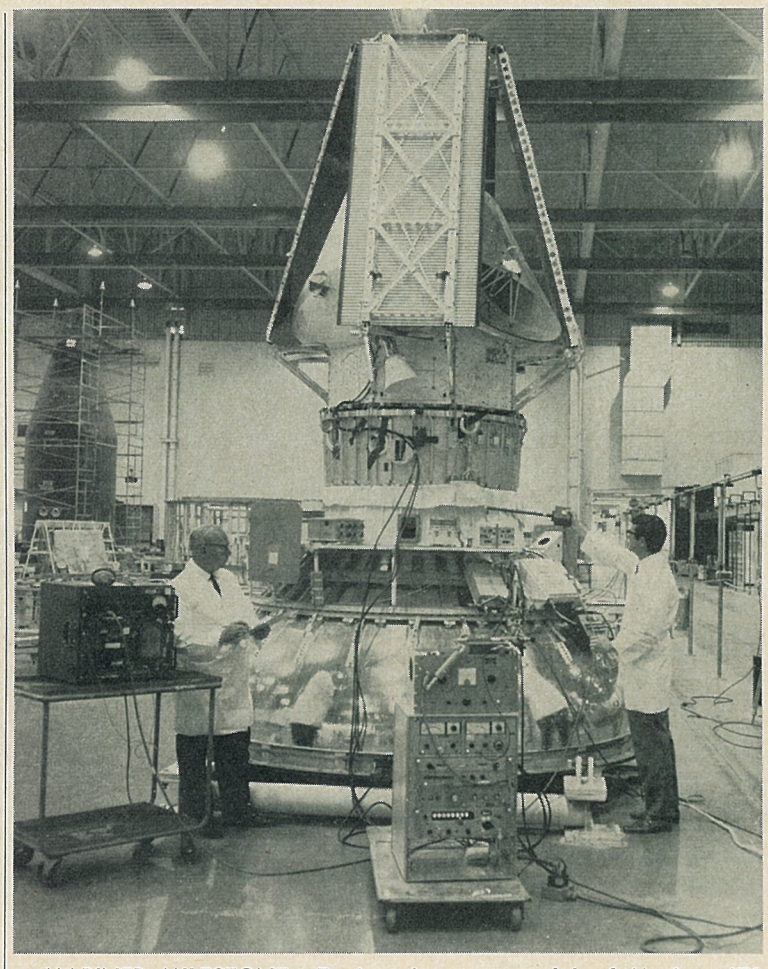
New 1970 ES submitters receiving the gold-color tickets for lunch in a plant cafeteria were D. G. Treadway, Dept. 572-3; W. L. Burkhalter, 144-1; L. I. Sartuche, 780-6; Allen Stowinsky, 967-5; T. L. Bartley, 545-1; R. E. Herold, 144-1; K. F. Cash, 761-0; R. E. Haltmeier, 250-2; N. F. Lewis, ETR 979-2, and H. R. McMenamy, 966-3.

Repeat suggestion winners were P. M. Castillo, Dept. 400-3; F. L. Estevane, 143-3; Paul Sletnar, 143-1; J. C. Velguth, 250-2; F. W. Sickler, 144-1; C. D. Duncan, 836-1; E. D. Miller, 780-6; D. G. Rice, 144-1; V. H. Lloyd, 143-1; and Frank Piersall Jr., 144-1.

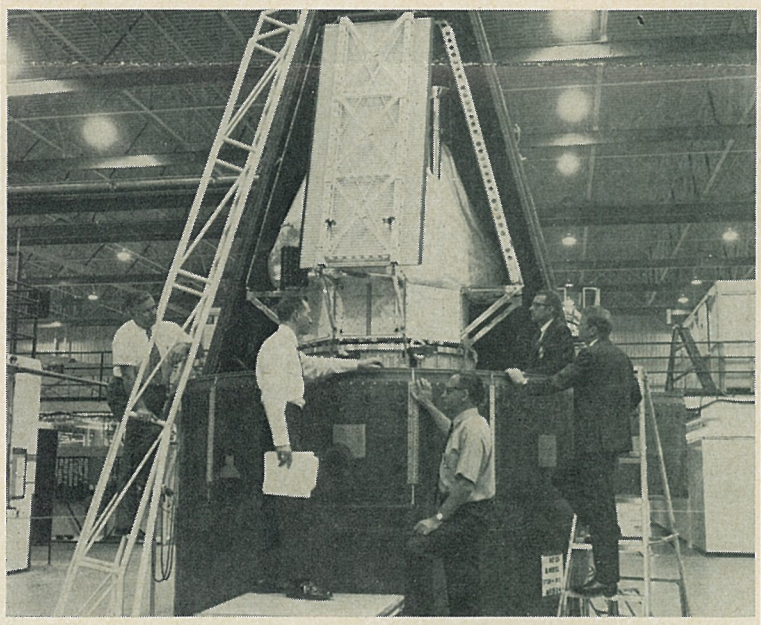
Five first-time ES submitters for the year and five repeat suggesters are being awarded meal tickets each week in addition to the usual cash awards for approved suggestions.

Winning ES numbers are obtained in "blind" drawings by employes of the Employe Suggestion group.

Heller said 182 suggestions were received during the first week of the meal ticket contest.



MARINER MILESTONE—Engineering test model of Mariner '71 Mars-orbiting spacecraft is checked at Convair's Kearny Mesa plant for compatibility with Centaur electronics by Bert Hoerl, left and Duane Mealey, both Dept. 541-0 senior electronic engineers.



Checking mating of spacecraft model with protective nose fairings, from left, are Tom Shaw of Jet Propulsion Laboratory (JPL), E. T. Muckley of NASA's Lewis Research Center, Bob Benzwi of Convair's Centaur program office, Elmer Floyd of JPL, Richard Jumont of NASA-Lewis resident representative's office.

Mariner Model Matched With Centaur, Fairings

A working test model of the two Mariner spacecraft that Convair Atlas-Centaur launch vehicles, AC-23 and AC-24, will send to orbit the planet Mars next year was run through a series of mechanical and electrical tests this month at the Kearny Mesa factory.

The spacecraft model was enclosed in the aerodynamic nose fairings for use on AC-23 to insure accurate fit in a mechanical match-mate exercise.

Electromagnetic compatibility engineers then used special instruments to insure compatibility between the spacecraft's three radio transmitters and electronic equipment aboard the Centaur.

Among those present for the tests were E. T. Muckley, Mariner '71 mission engineer from NASA Lewis Research Center; R. U. Hofstetter, launch vehicle and operations manager from NASA Ames Research Center for the 1972 Pioneer project for first Jupiter fly-by; Tom Shaw and Elmer Floyd from Jet Propulsion Laboratory; Richard Jumont of the NASA-Lewis resident representative's office; Bob Benzwi of Convair's Centaur program office; and Loren Batchman, a launch vehicle programs electronics engineer.

Ed Lindgren of the Centaur program office said AC-23 and AC-24 Mariner launches will be scheduled several days apart next May and that the twin spacecraft, after lengthy coasts in space, will be placed into orbit around Mars for prolonged observation and mapping of the "red planet."

One of the Mariners is scheduled to circle the planet every 12 hours in an orbit with a 1,000-mile periapsis and a 10,600-mile apoapsis. The other is to have a 32.8 - hour orbital period and

(Continued on Page 2)

North American-Convair Team Clears Hurdle In Space Shuttle Race

NASA has selected the combined North American Rockwell-Convair division space shuttle team for one of two parallel, $8 million, 11-month Phase B definition and preliminary design studies for a reusable two-stage space transportation system.

Dr. Donald Dooley, Convair vice president-space programs, said more than 200 division employes will work directly on the Phase B study and related research and technology. In Phase B, details and specifications down to assembly level will be developed for the space shuttle booster by Convair and for orbiter vehicles by the North American Rockwell (NR) Space division.

Technical direction of the NR-Convair study will be from NASAs' Manned Spacecraft Center in Houston. A similar study by McDonnell Douglas and Martin-Marietta will be directed from NASA's Marshall Space Flight Center. Technical liaison will be maintained on booster and orbiter studies at each of the two centers and with organizations working on space shuttle engine and orbital space station studies.

Vertical-takeoff and horizontal-landing shuttle vehicles could be flight tested by 1975 and will transport crew, passengers, and cargo from earth to near-space and back.

The orbiter vehicles, designed for self-sustaining operation for more than a week in space, will be used for logistics missions such as delivery of propellants and supplies to a space station or another orbiting vehicle; delivery of propulsive stages and payloads; and for placement, maintenance, and retrieval of experiment modules and satellites. It also may be used for short-duration missions, including rescue operations.

Potential space shuttle vehicle users include NASA, Department of Defense organizations, commercial organizations such as Communications Satellite Corp., and foreign countries and companies.

The reusable space shuttle vehicles will reduce space launch operations costs by 90 per cent. They will afford a high launch rate capability and short turnaround time and will provide a commercial airline type of environment for crew and passengers.

Dooley said primary objectives of the Phase B study will be to define the shuttle system; perform booster and orbiter preliminary design for both high (1,500-mile) and low (200-mile) cross-range return flight; obtain a detailed understanding of the scope, timing, and cost of the system; and define supporting research and technology that should be accomplished. NASA later will select one of the two orbiter designs for development.

Weight-to-performance, cost, schedule, and safety analysis will be performed and wind tunnel, mechanical, structural, electrical and other test effort will be included. Particular attention will be given to reliability, maintainability, and manufacturability.

"Baseline" shuttle vehicles defined in the NR-Convair Phase B study proposal were based on more than a half-million manhours of work and 1,500 hours of wind tunnel testing during the past year by NR and Convair.

Included is a single booster and two different configurations of orbiters for high and low cross-range return capabilities.

The Convair booster would

(Continued on Page 4)

Ranks of Bonds Buyers Boosted

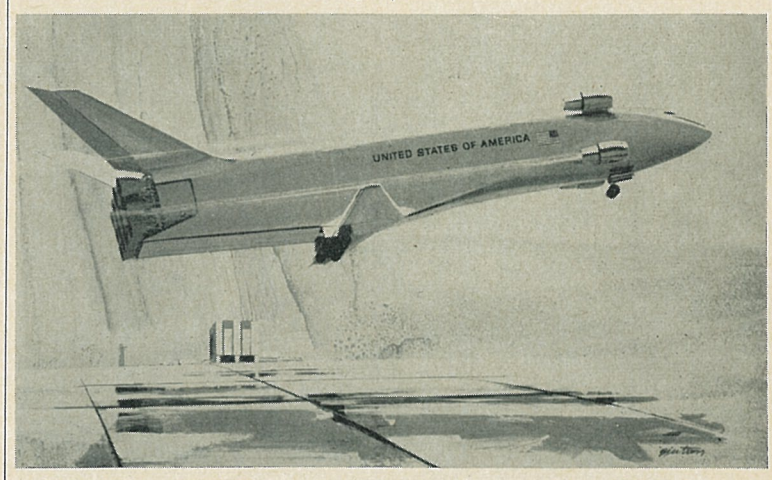
Early reports last week in Convair division's 10-day U.S. Savings Bonds campaign indicated a substantial increase in number of first-time buyers. Coordinators expected the total number of Convair people purchasing bonds regularly through the payroll savings plan to go over the 90 per cent mark by today.

More than 100 functions already had achieved 100 per cent participation early last week. They were:

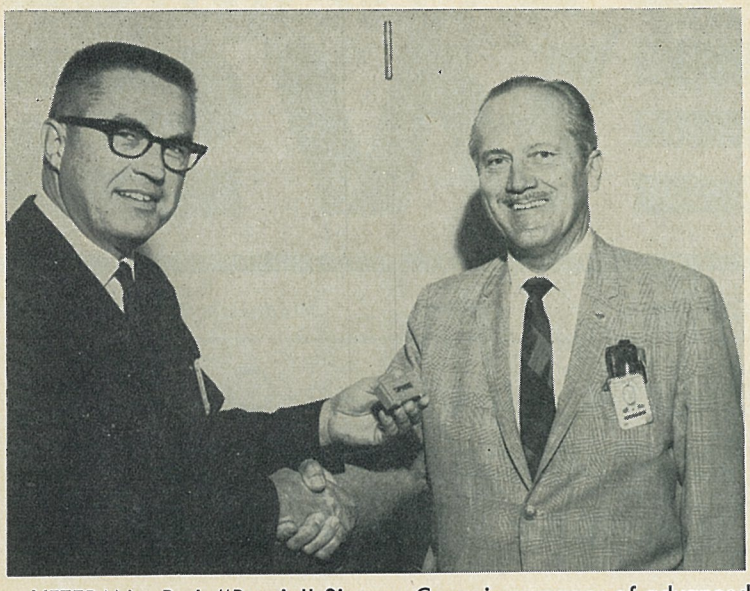
Depts. 005-0, 055-0, 100-0, 101-0, 102-0, 103-0, 103-1, 104-5, 106-0, 110-1, 110-2, 130-2, 130-3, 130-4, 130-5, 130-7, 130-8, 131-4, 131-7, 131-8, 131-9, 140-0, 140-1, 140-2, 141-0, 141-4, 143-0, 144-0, 148-2, 149-9, 190-0, 195-2, 195-4, 196-0, 197-0, 199-0, 200-2, 202-0, 204-0, 400-0, 400-7, 401-3, 401-8, 403-1, 420-2, 450-0, 501-0, 501-1, 501-2, 501-3, 501-4, 506-1, 506-2, 506-3, 506-4, 506-5.

Also 509-0, 511-1, 511-3, 511-5, 516-1, 520-0, 529-1, 532-0, 545-0, 551-1, 563-0, 566-0, 567-0, 567-1, 567-2, 570-1, 574-3, 575-0, 575-4, 577-0, 578-0, 578-5, 579-0, 580-0, 580-5, 581-0, 581-5, 589-0, 589-1, 589-2, 590-0, 598-0, 598-1, 700-0, 780-0, 800-0, 830-0, 932-4, 950-0, 950-1, 950-3, 951-6, 953-0, 953-2, 954-0, 954-3, 954-4, 958-0, 958-4, 958-6, 961-0, 963-1, 967-9, 979-0, 985-0, 985-2, 985-5, 986-1, 988-0, and 989-0.

Also 100-1, 100-2, 130-0, 195-5, and 979-5.



BOOSTER RETURN—Space shuttle booster for which Convair division has been selected for Phase B preliminary design study is depicted in painting by Roy Gjertson coming in for landing after carrying orbiter vehicle into space. Twelve liquid hydrogen engines in tail would power vertical liftoff through atmosphere.



VETERAN—B. J. "Bernie" Simons, Convair manager of advanced commercial aircraft, Dept. 105-0, receives 35-year service emblem from Lyman Josephs, Convair general manager. Simon has served continuously since joining Stinson division in Wayne, Mich. in 1935.

Powerful New Stretch Press Forms Skins For DC-10 Tri-Jetliners

A new 500-ton-longitudinal-stretch press at Convair division's Kearny Mesa factory was used for forming of DC-10 fuselage production skins for the first time early this month.

First production skin formed was for use in a C-section bottom fuselage panel scheduled for the 17th of the McDonnell Douglas wide-bodied tri-jetliner.

The $900,000 Sheridan Gray press installation in Bldg. 5 at KM will be used in stretch-forming 35 different configurations and sizes of skins and doublers for each DC-10. Each part will be stretched 1 to 2 per cent as it is shaped over a die.

Don Evanson, program manager, said a new die is to be proofed every three days between now and September — with seven production-quality skins to be formed before proofing of the next die begins. Low-cost "proofing" material will be used until press settings for production use have been determined.

"Since last October, when design of the pit to house the press began, we've been shooting for start of production forming on May 4 — and we made it," Evanson commented. "This was only accomplished by a team effort."

The giant press, weighing about a half-million pounds, was put together and test run first at the Sheridan Gray factory in Huntington Park then was disassembled and trucked to Convair.

The first part, a 30-ton main rail, was received Feb. 20 and installation was completed March 13. Two large doors were cut in the side of the factory for entry of press dies.

Material from 60 inches to 40 feet long can be formed in the press now — and it can be expanded in the future for longer materials.

The 28-piece jaws of the press grip with pressure up to 10,000 pounds per square inch. Its hydraulic system can force three die tables upward with a force of 1,000 tons against sheet metal for ram-forming as well as pull material over a curved die for traditional stretch-forming. All press operations are controlled from one console and stretch and ram forming can be performed simultaneously.

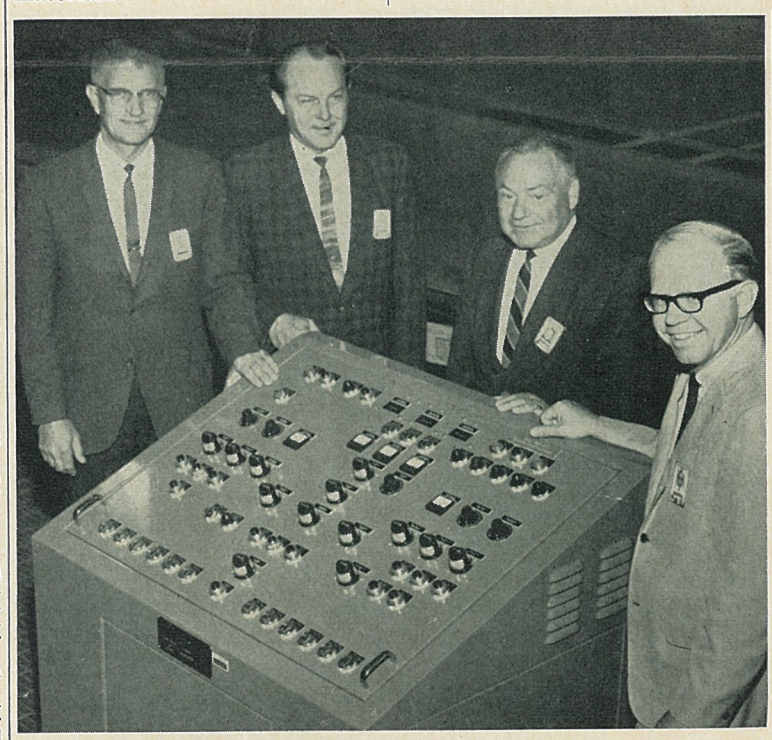
DC-10 skins to be formed arrive from Lindbergh Field on A-frames and are lifted by overhead crane and a Vac-U-Lift unit with 24 vacuum "feet." A new crane and rail system to cover a wider area is scheduled for installation in July.

After being stretch-formed, the DC-10 skins will have tooling and material handling holes drilled then will be trimmed and inspected before being returned to LF for processing in Bldg. 75.

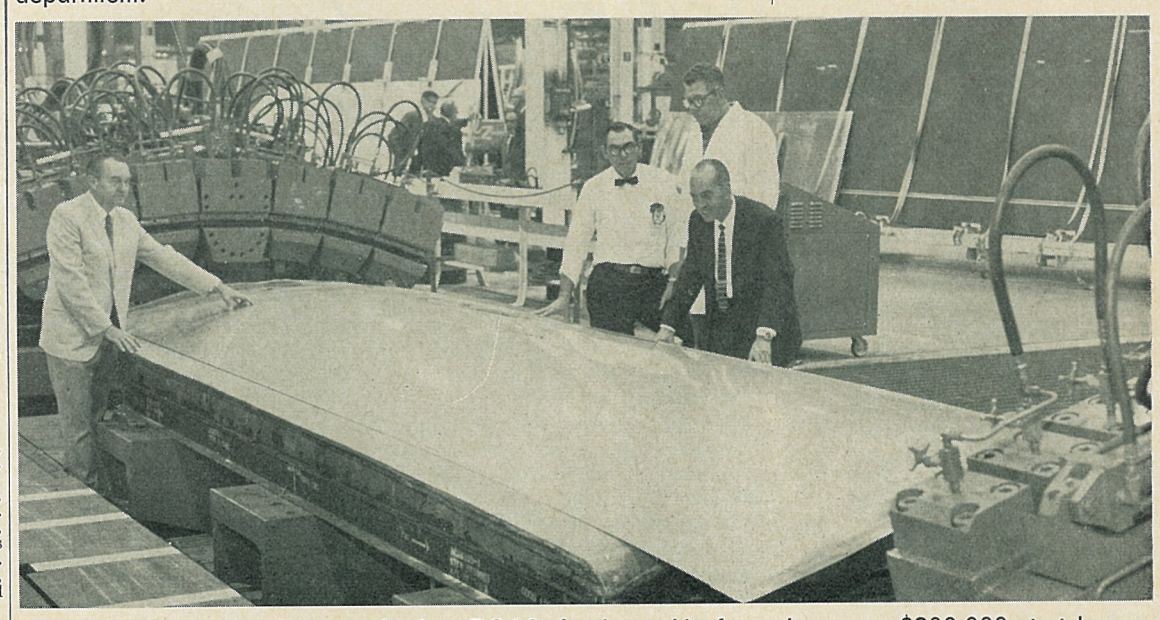
E. E. Raynor of Dept. 732-0, the press operator, received "on the job" training for his new duties in the Sheridan Gray factory.

Jack Velguth was responsible for press installation; John Huss for its "buy off" by the division; Hank Cowell for factory layout; Jim Redfield, Bob Tilton, and Al Herman for purchasing; and Mike Alianelli for production control. George Baxter of manufacturing development is establishing the test program for each die and Jim Schiller is foreman in charge of press operations.

"FIRST" DRAWING—Inge Cohn, Convair Dept. 192-0 secretary, draws ticket with Employe Suggestion number on back for first free lunch ES award. Holding bag is E. D. Heller, manager of cost reduction and value controy. (Story on Page 1.)



PRESS PANEL—Gathered around control panel of giant stretch-press, from left, are John Huss and Jack Velguth of plant engineering; H. A. Colwell of industrial engineering; Jim Redfield of material department.



STRETCH-FORMED—First production DC-10 fuselage skin formed on new $900,000 stretch-press at Convair's Kearny Mesa plant is checked by, from left, Don Evanson, program manager; Jim Schiller, sheet metal department supervisor; E. E. Raynor, press operator; George Baxter, manufacturing development engineer.

Log Book Entries

Service Emblems

CONVAIR

Service emblemes presented between May 16 and May 31.

Thirty-five-year: Dept. 105, Bernard J. Simons.

Thirty-year: Dept. 002, F. M. Baxter, 019, Vivian G. Reid, C. E. Rice; 027, W. H. Crouch, C. G. Goatley Jr.; 031, J. Darwell; 046, C. F. Hagata; 059, D. E. Knapp Jr.; 130, M. V. Wisdom; 210, J. J. Beckman; 401, F. N. Oden, H. L. Slack, K. M. Vesock; 407, D. V. Neece; 450, R. C. Monson; 507, L. F. Buczynski; 999, R. W. Gluyas.

Twenty-five-years: Dept. 002, A. L. Touchet; 027, L. B. Cazort; 046, C. F. Douse; 149, M. C. Jorgensen; 420, E. L. Larson.

Twenty-year: Dept. 027, Marilyn G. Sorcinelli; 057, G. W. Files; 059, Mabel B. Glaser; 143; C. R. Lind; 250, V. C. Somers; 400, R. J. LaMadrid, A. M. Swerdloff; 407, Mary W. Davis; 512, A. E. Anderson; A. H. Riffel; 515, C. S. Johnson; 731, E. H. Mass; 952, Patricia O. Mayo.

Fifteen-year: Dept. 001, A. T. Rounder; 015, A. D. Kirkpatrick, S. Okamoto; 020, H. Silva, 046, R. Areta; 100, L. E. Olson; 142, W. E. Rutkowski; 143, Doris E. Jensen; 148, Dolores C. Walker; 250, W. E. Majorek; 401, P. G. Davila; 420, Norma M. Morgan; 515, E. Dorff; 518, Florence S. Prouse; 553, G. Cazaux; 565, G. R. LaRose; 780, F. J. Trout, W. G. Wartney; 966, W. W. Lahr; 999, L. E. Van Riper.

Ten-year: Dept. 027, M. F. Yagere; 059, D. A. MacGregor; 101, Jacqueline C. Rockwood; 202, E. N. Harmon, R. J. Vogler Jr.; 454, W. J. Irwin Jr.; 507, E. C. Beach Jr.; 570, R. J. Magnus; 578, R. D. Crousel; 731, E. A. Botticelli; 953, Lilliann B. Scott.

ELECTRONICS

Fifteen-year: Dept. 426, N. L. Dahl.

Awards

CONVAIR

Employe Suggestion awards approved for week ending May 15:

J. H. Akers, Dept. 731, $15; M. B. Bailey, 500, $15; J. J. Boyer, 045, $15; G. Dickerson, 027, $15; G. W. Eberle, 400-9, $147.70; R. Fried, 027, $15; H. Gaines, 149-5, $15; M. E. Gallagher, 149, $15; R. F. Garcia, 250-5, $15; M. E. Howell, 143-5, $40.50; R. B. Jamieson, 019, $38.50; L. M. Jones, 143-4, $57.70; P. A. Manning, 979-3, $20.80; A. J. McGregor, 149-7, $15; R. B. Miller, 565, $93.80; F. J. O'Connor, 059-9, $91.80; F. A. Ohm, 059-6, $23.70; C. J. Lewis, 250-1, $15; W. W. Linder, 964-2, $124.50; W. F. Lindquist, 507, $15; G. E. Lopez, 019, $241.30; R. V. Lucero, 019, $50.50; G. Palma, 198, $15; W. V. Peed, 143-5, $15; S. Persley, 027, $36.50; P. C. Pond, 780-1, $88.20 (two awards); G. E. Ream, 149-8, $15; F. J. Salazar, 001, $15; T. M. Sammon, 141-2, $15; R. W. Sanger, 507-0, $16.10; D. F. Tysall, 001, $55.50; J. Walsh, 833-1, $15; H. E. Wocelka, 046, $58.70; C. W. Younger, 953-1, $15.

Employe Suggestion awards approved for the week ending May 8:

B. J. Adams, Dept. 979-3, $15; H. D. Akers, 143-3, $10; T. E. Barker, 810-2, $51; R. D. Behlman, 831-1, $15; H. A. Benner, 143-4, $15; W. S. Betts Jr., 584, $30 (two awards); A. E. Brady, 507, $15; M. S. Brown, 250, $15; J. D. Burrows, 250-5, $98.20; Q. E. Clem, 551, $106.80; J. E. Cordova, 507, $15; H. E. Crabtree, 985-3, $15; B. C. Dickinson, 526-2, $15; J. C. Easton, 578-1, $19.60; B. J. Fields, 027, $43.70; E. M. Fleming, 526-6, $15; P. B. Hall, 524-5, $15; B. O. Hartwell, 046, $17.80; B. W. Jones, 059-5, $158.70; C. J. Lewis, 250-1, $15; W. F. Lindquist, 507, $319.50; D. G. Longbottom, 780-4, $10; R. L. Lucas, 143, $9.15; E. V. Marikle Jr., 507, $15; S. J. Martin, 574-2, $23.20; R. J. Moe, 454, $36.50; J. A. Nagi, 454, $25; D. R. Noon, 027, $170.80 (three awards); S. Persley, 027, $15; R. B. Peterson, 958-6, $142.50; R. J. Phillips, 454, $15; E. Puett, 460, $28.20; H. H. Richter, 524-5, $15; G. A. Rummel Jr., 143-1, $76.15 (two awards); M. J. Saunders, 059-2, $15; L. B. Shaw, 566-2, $15; P. H. Stephens, 985-3, $15; H. N. Sylvester, 512-3, $72; D. D. Tiedmond, 001, $15; G. L. Toyen, 553-2, $576.10; J. L. Veach, 731, $15; C. W. Weber Jr., 574-2, $15.80; K. C. White, 979-1, $25; B. J. Wilson, 810-1, $90; C. H. Young Jr., 584, $15; R. J. Zenger Jr., 518, $15.

Invention Disclosures

CONVAIR

BLAKEY—A. G., Dept. 149. Combination air-blast vacuum cleaner.

HART—W. A., Dept. 979. Double plug shuttle valve.

PARDUBSKY—J. A., Dept. 491. Molten metal dispenser.

PEDDIE — G. D., Dept. 491. New stretch form surfacing techniquee.

POULSEN—P. D., Dept. 596. Extended range spectroscope for intense sources. Image recording device with post-recording selectable spectral bandpass. (Two inventions).

SUGGS—D. B., Dept. 988. "Precision point" lead pointer (wedge or round).

WIANT—H. R., Depet. 572. Method of fabrication of seamless composite tubing.

Retirements

CONVAIR

BAYNE—William C., Dept. 250-3. Seniority date Sept. 25, 1947, retired March 31.

ELLIOTT—Raymond A., Dept. 595-6. Seniority date July 10, 1956, retired May 1.

HITNEY—Charles J., Dept. 553-2. Seniority date Nov. 14, 1955, retired May 1.

McDONOUGH—Henry G., Dept. 145-1. Seniority date July 25, 1960, retired April 30.

PATTERSON—Theron O., Dept. 400-1. Seniority date Jan. 8, 1952, retired April 9.

PERKINS—Lincoln B., Dept., 031-0. Seniority date July 18, 1956, retired April 30.

REID—Karl B., Dept. 566-2. Seniority date Nov. 15, 1950, retired May 8.

WENDT—Harold O., Dept. 589-1. Seniority date May 5, 1958, retired April 30.

Personals

CONVAIR

I wish to acknowledge with thanks and deep appreciation the "Jay's Happy Party" given in my honor, for my retirement. I will always remember the gifts and kind words offered by all my friends and co-workers.

Jay Counsellor
Surfside "36," ETR

* * *

Thanks to my Convair friends for the many cards and flowers received during my illness.

W. B. Barth
Dept. 780-0

* * *

I wish to exepress my gratitude and thanks to the many friends and co-workers at Convair who extended expressions of sympathy and thoughtfulness as a result of the loss of my dear husband, John.

Sydna Greacen

* * *

I wish to express my sincere appreciation and gratitude to the co-workers for their kind expressions of sympathy and flowers on the death of my husband, Larry Unzicker.

Mrs. L. J. Unzicker

* * *

Thank you for the flowers you sent to the services for Leo Shaffer. The thoughts behind your gift help bring consolation.

Enid Shaffer and family

* * *

We would like to express our gratitude for the flowers and cards at the recent loss of Chester E. Haynes, Dept. 002.

Ellen Haynes and family

ELECTRONICS

I wish to express my thanks for the kind expressions of sympathy on the death of my father.

Gloria Conrad

Births

CONVAIR

MORIN—Daughter, Catherine Louise, 5 lbs. 9 ozs., born April 26 to R. O. (Dept. 962-8) and Regina Morin.

PASTOR — Son, Paul Michael, 8 lbs. 12 ozs., born May 6 to George (Dept. 953-1) and Elaine Pastor.

Deaths

CONVAIR

BAKKE—Marian H., retired July 29, 1966, Dept. 836. Survived by daughters, Barbara Le Roy and Janet Balsley.

DAVIES—W. E., retired Oct. 31, 1969, Dept. 144. Survived by his wife, Emma.

EDWARDS—Jennie B., retired May 3, 1963, Dept. 210, died April 29. Survivors include her daughter, Claire Richmond.

SMITH — Jesse M., retired Feb. 28, 1967, Dept. 250, died May 16. Survived by his wife, Ruth.

TUCKER — Karl A., retired Sept. 7, 1963, Dept. 25-5, died May 8. Survived by his daughter Marie Hasch.

WALKER — Warren G., Dept. 545. Died May 12 in plane crash at Edwards AFB. Survivors include his wife, Viola and two children.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P. O. Box 1950, San Diego 92112.

Mariner Spacecraft Model Matched

(Continued from Page 1)

range from 1,000 to 26,700 miles from the surface.

"Use of orbiting spacecraft will permit study of seasonal affects and scanning and mapping of large areas of the surface of Mars," Lindgren said.

"Since the inclination and orbital periods of the two spacecraft will differ considerably, varied observations of the atmosphere and planet surface will be possible. Scientists have a particular interest in learning more about composition of the Mars polar caps."

Spacecraft soft - landings on Mars are scheduled in 1975 in the Viking program.

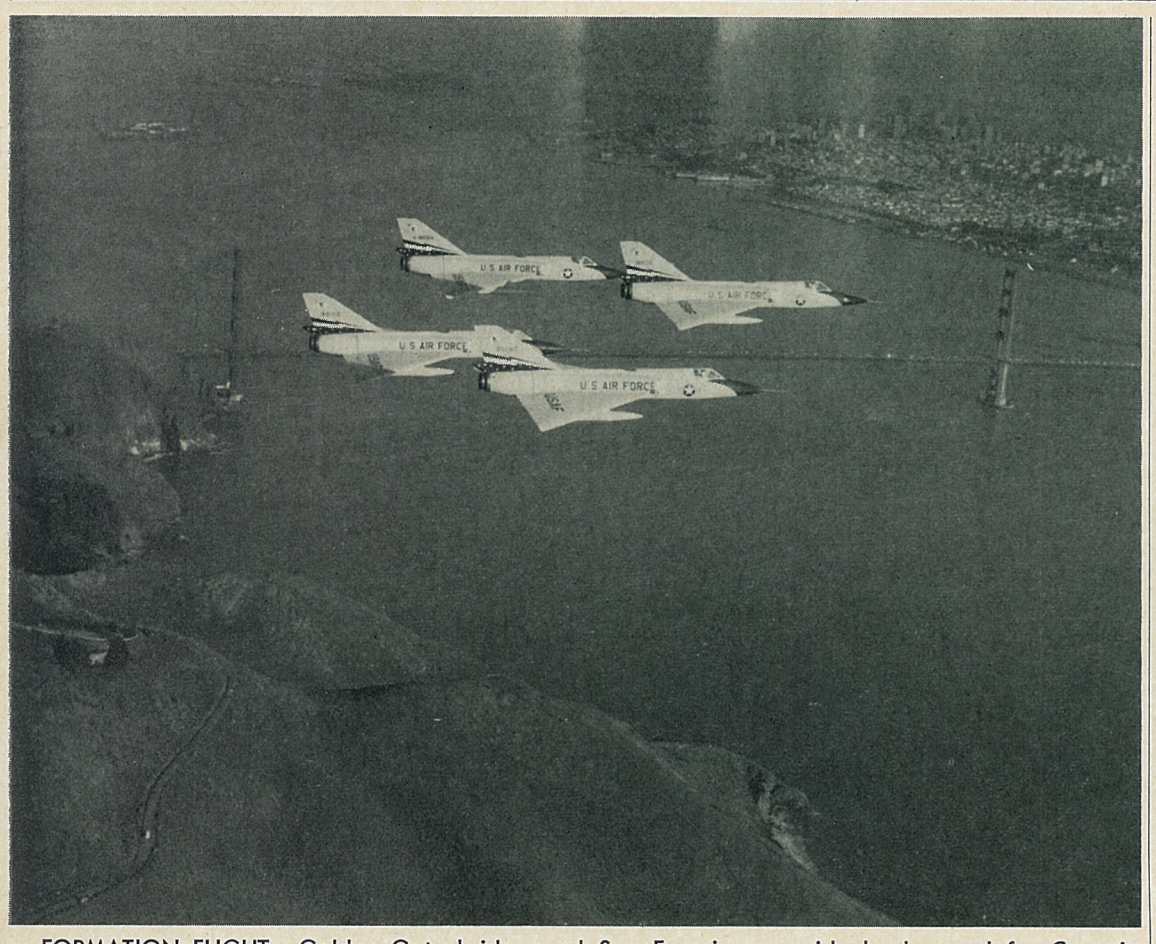
"Cost Reducers"

CONVAIR

Cost Reduction Achievement Pins presented.

Ten-credit pins: D. R. Noon, Dept. 027; W. G. Lux, 144.

Five-credit pins: H. M. Fisher, Dept. 507; R. Young, 566; D. R. Noon, 027; L. H. Wilson, 027; J. M. Ibarra, 193; G. N. Evans, 020; J. Frogge, 144; J. Gallant, 144; H. E. Crabtree, 985; A. Anderson, 027; P. H. Stephens, 985; B. A. Buffat, 143.



FORMATION FLIGHT—Golden Gate bridge and San Francisco provide background for Convair-built F-106s from 1st Fighter Wing at Hamilton AFB, Calif.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

JOSEPH B. WILSON from Fort Worth division to Corporate Headquarters accounting staff; **JAMES E. WILLIAMS** (1970) from Electronics-SD to Stromberg DatagraphiX as manufacturing analyst; **WALTER C. PAULS** (1956) from Convair to Electronics-SD as data management coordinator; **JAMES P. WOOLNOUGH,** from Washington Field Office to senior requirements engineer, Convair; **CHARLES F. HOLMES** (1959) from Pomona to Material Service (Freeman Coal Mining Corp.) as manager of employe relations; **JOSEPH J. GERACI** (1956) from Convair to service representative, DatagraphiX.

Convair, Quincy Winners In Suggestions Contest

Results of a "Suggestion Performance Contest" among General Dynamics divisions/subsidiaries, inaugurated in 1969, were announced recently with Convair division earning "best performance" for the year and Quincy Shipbuilding division "most improved."

Algie A. Hendrix, Corporate vice president, reported that suggestion savings totally for the year reached $11,953,192, a new annual high.

Convair's award was based on 21 per cent participation of eligible employes and a 30 per cent rate of approvals, resulting in a $1.12 million saving, Hendrix said.

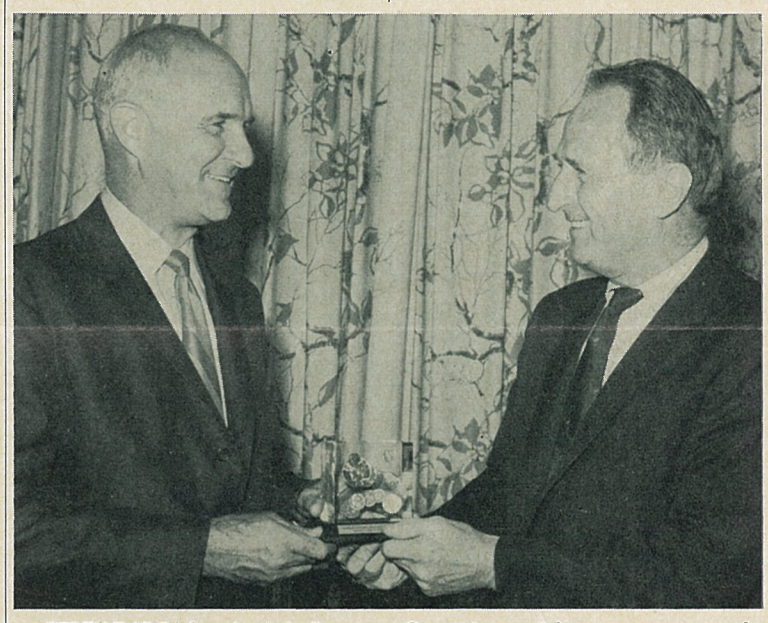
Quincy Shipbuilding's award was the result of an impressive improvement record of 161 per cent.

Of 93,509 employes eligible, Hendrix reported a total of 14,773 participating, submitting a total of 29,497 suggestions.

GD's Share Owners Meeting in Texas

General Dynamics Corporation's annual meeting of share owners was scheduled for this morning (May 27) at the First National Bank of Fort Worth, Fort Worth, Texas, with Roger Lewis, president and board chairman, presiding.

Only item of business expected was election of a 14-member Board of Directors.



FERTILE IDEAS—Jack L. Bowers, Convair president, accepts trophy for division's first place win in "Suggestion Performance" during 1969 from Roger Lewis, General Dynamics president.

Memorial Day Holiday Scheduled For May 29

General Dynamics people will enjoy a three day weekend with Friday (May 29) set as legal observance of Memorial Day.

Facilities will be closed Friday except for necessary maintenance and security functions.

Regular shifts will resume Monday, June 1.

For Space Stations

Module Concepts Study Continues

Convair division has been awarded a $300,000 six-month extension to the Experiment Module Concepts Study being conducted for NASA's Marshall Space Flight Center.

The study will provide operations analysis, conceptual designs, and systems "tradeoff" data for experiment modules to be operated in conjunction with a future manned earth orbital space station and space shuttle, space tug, or other manned space logistics vehicles.

Denis J. Powell, study manager, said basic concepts generated during the past nine months by Convair and TRW Systems group (as subcontractor to Convair) in the Phase A study for NASA-Marshall will be developed further during the next six months.

"Emphasis will be on experiment growth requirements, subsystem analysis, maintainability, and driving down cost for design, fabrication, launch, and orbital operations and maintenance of the modules," Powell said.

"The experiment modules and the orbital space station will be designed for 10 years of in-space operation. We have to make sure we 'build' that capability into the module system — and that each module will be capable of support for all experiments designated for it."

Max Nein, contracting officer for the study from NASA-Marshall, and Dr. Rodney Johnson, study sponsor from NASA's Office of Manned Space Flight in Washington, were at Convair late last month for a series of conferences on the study.

In-depth analysis of experiments selected for inclusion in the planned experiment modules and commonality of their requirements has enabled Convair engineers to define three different common module (CM) concept configurations for housing the 18 different groups of experiments being implemented.

The experiments will vary in size and complexity from a 120-inch astronomical telescope to small instruments for measuring local contamination.

CM-1, a free-flying module serviced periodically from the orbital space station or by space shuttle or tug, would carry (in seven separate modules) x-ray, stellar, high-energy stellar, solar, material science and processing, and fluid physics experiments. It would be basically 15 feet in diameter and 25 feet long.

A "propulsion slice" (a propulsion unit with hydrazine and resistojet engine clusters and tankage for hydrazine, ammonia, and helium) would be attached to the CM-2 module for fluid physics experiments. It would be 14.5 feet in diameter and 9 feet long.

CM-3 would dock and remain attached to the space station and would carry (in five separate modules) cosmic ray labs, a space biology lab, a material science and processing lab, and a fluid physics lab. It would be 15 feet in diameter and 20 feet long.

CM-4 would be docked to the space station also and would house (in three separate modules) earth surveys, remote maneuvering subsatellite modules, and component test and sensor calibration experiments.

Powell said experiment modules are to operate nominally at 270 nautical miles altitude and at 55-degree inclination with the space station but that several other operational alternatives are being considered.

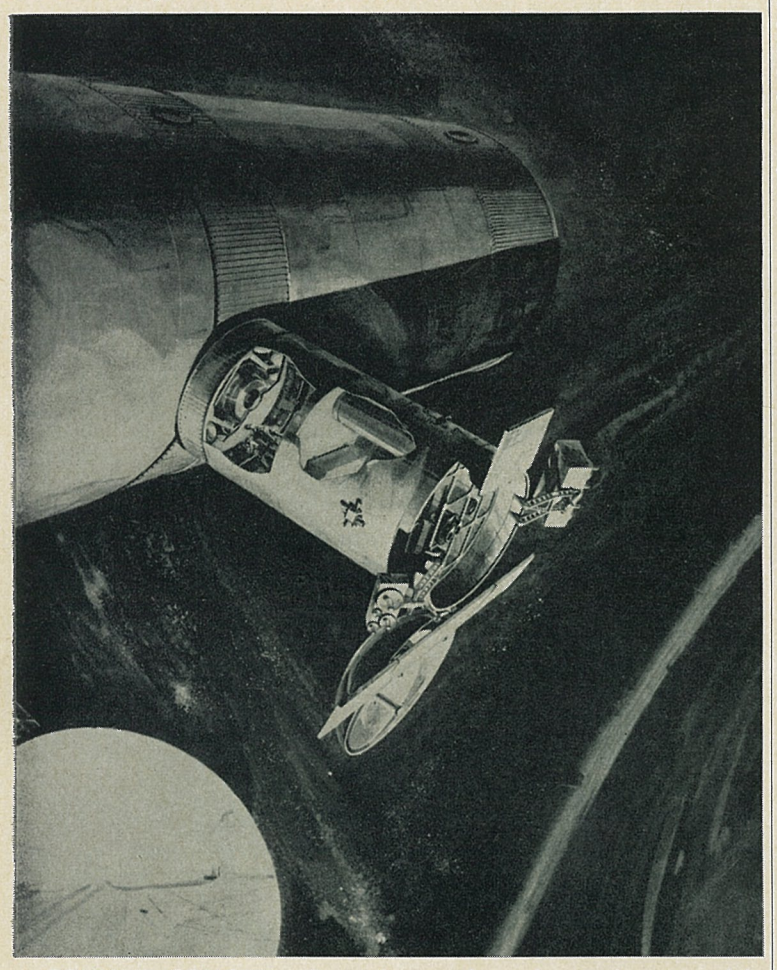
The modules could be carried into orbit in the 15 by 60-foot cargo compartment of the planned space shuttle orbiter or they could be launched unmanned by expendable space launch vehicles.

"The weight of a fully equipped space station for such use would exceed the launch capability of our Saturn V," Powell said. "In addition, more flexible launch schedules for modules could be tailored to coincide with availability of new advanced experiment equipment.

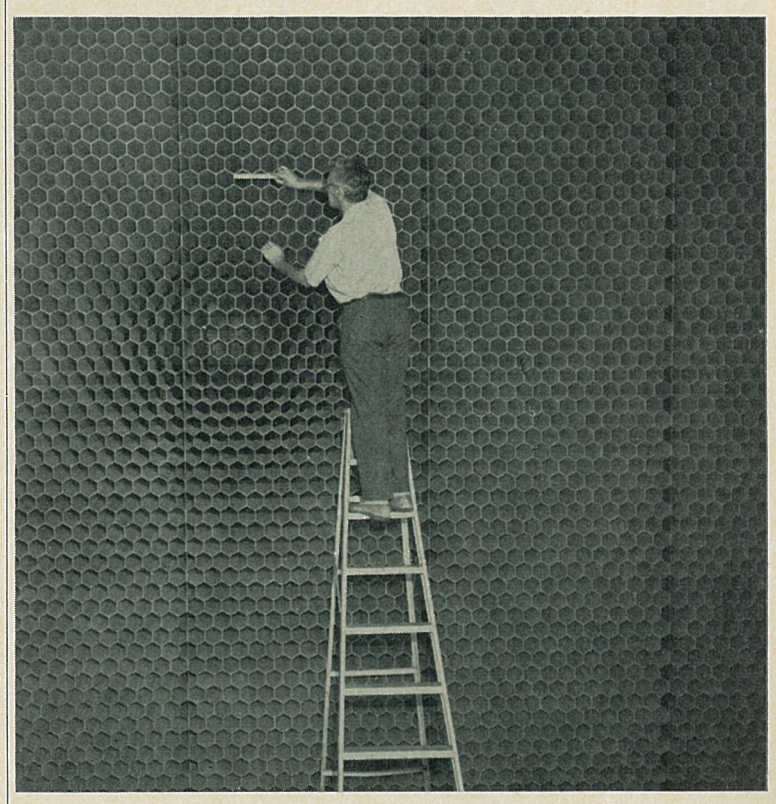
"Costs for building, checking out, and operating experiment modules also can be spread out over a longer period as funding limitations require."

Powell said results of the current study will help NASA determine requirements for Phase B experiment module studies, tentatively scheduled for next year, and shape other future manned space programs by showing feasibility and cost of experiment modules for use in space research.

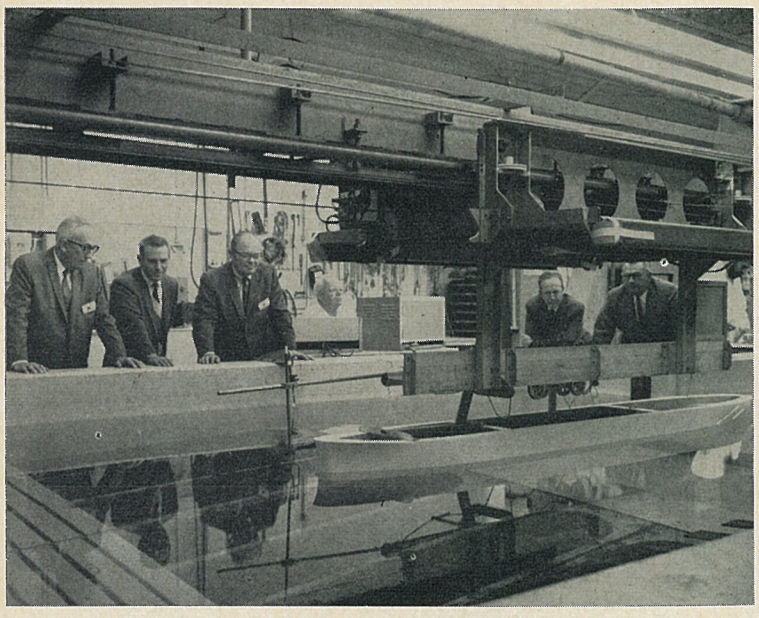
Among key personnel and their areas of responsibility are John Macdonald, systems studies; John Hunter, configuration analysis; Dan Chiarappa, subsystems; and Robert Bradley, costs and schedules analysis. TRW Systems support is headed by Eric Burnett from its Redondo Beach facility.



CONVAIR CONCEPT—One of a number of experiment module concepts being developed by Convair division for NASA is depicted in drawings by artist Jack W. Davis. Earth surveys module is attached to orbital space station.



FLOW DIRECTORS—A. F. Williams is shown checking one of 6,000 honeycomb cells installed recently in Convair division's low speed wind tunnel at Lindbergh Field. Cells direct flow of air to test section where models are tested.



CHECK UP—National Steel and Shipbuilding Co. executives visited Convair Marine Test Facility recently to observe towing basin hydrodynamic tests of proposed cargo ship design, using scale model. From left, John Letherbury, NASCO vice president, engineering; Ken Evans, NASCO naval architect; John V. Banks, NASCO president; S. T. Wood, basin operator; Ken Romberg, NASCO chief naval architect; A. W. Adams, facility group engineer.

North American-Convair Team Clears Space Shuttle Hurdle

(Continued from Page 1)

carry a two-man crew and would have 12 liquid hydrogen-liquid oxygen booster engines, about 22 attitude-control rocket motors, and three air-breathing engines burning hydrogen for return flight to the launch site and landing.

Orbital vehicles designed by NR also would use liquid hydrogen in their two main engines, would have attitude-control rocket and on-orbit propulsion, would have air-breathing engines for return, and would be configured for a two-man crew, 12 passengers, and a 15 by 60-foot cargo bay. The same main engines for booster and orbiter vehicles will be used, for economic advantages.

The orbiter for low cross-range is a straight, fixed-wing concept designed to provide simplicity, low weight, good handling, and good landing characteristics. It could deliver approximately 45,000 pounds of payload to an orbital space station.

The orbiter for high cross-range return is a delta-wing concept designed to provide a high lift to drag ratio and have trim capability over a wide angle-of-attack range. After steep-angle re-entry, it would have a long hypersonic glide before subsonic flight.

Convair's booster could be mated with either of the orbiters and cargo loaded in horizontal position then be transported to the launch pad on the booster landing gear without use of a separate transporter. Tentative plans are for modification of Complex 39 launch pads at Kennedy Space Center for use by space shuttle vehicles. Other operations sites also will be analyzed in the Phase B study.

The orbiters would mount piggy-back on the upper surface of the Convair booster to provide aerodynamic stability during ascent.

Dooley said NASA's selection of the NR-Convair team for one of the two Phase B studies resulted from "an outstanding proposal" submitted by the team and could only have been possible because of the "exceptionally good cooperation" between the two organizations and subcontractors including American Airlines, Honeywell, and IBM.

"This selection marks the achievement by Convair of the first major space shuttle milestone," he said. "Other milestones lie ahead of us before we realize our goals to design, develop, manufacture, and launch the booster stage of the space shuttle. With dedication to continued superior performance, we can achieve these goals."

The current Phase B study is expected to be followed by Phase C detail design and Phase D vehicle fabrication and testing.

Convair's Phase B study effort will be directed by Dooley, who served as vice president of Aerospace Corp. before joining the division in February, and by Richard Keehn, chief engineer-space shuttle booster, a 20-year Convair veteran who formerly served as program manager for Atlas space launch vehicles.

GOOD IDEAS—D. R. Noon an aircraft assembler in Dept. 027 (left) receives Convair's first 10-credit Cost Reducttion Achievement Award pin from Lyman C. Josephs, division general manager. A prolific suggester, Noon is division leader in implemented ideas for period January, 1969 to date with 30 approved suggestions. Credits toward award are counted for each suggestion approved after Dec. 15, 1969 to recognize Convair people who consistently contribute to cost reduction efforts.

Group from ESRO Visits Convair Plant

Five representatives and consultants from the European Space Research Organization (ESRO) visited Convair's Kearny Mesa plant this month while in the U.S. to further their knowledge of the NASA space station program and possibilities for European participation.

The five and an accompanying NASA Headquarters representative were briefed on Convair space shuttle, experiment module, erectable antennas, space tug, OV-1 satellite, and centrifuge work and toured the division's electronics factory.

Nadine Prior Leads In Women's Golf

Results of the CRA Women's Golf Singing Hills-Pine Glen tourney May 9 showed Nadine Prior taking top honors, Mabel Humphries runner-up and Dorothy Johnston placing third.

The annual Ernie Paul Memorial tourney will be played June 13 at Mission Bay course with 9 a.m. tee-off time.

Rental Car Use Urged For Trips

Convair employes driving out of town on division business have been asked to use short-term rental autos rather than privately owned vehicles.

John Speed, transportation section general foreman, said rental cars are readily available at low cost and may be reserved by calling Chuck Hendricks, ext. 1621 LF, or Ernie Lara, ext. 1515 KM.

"Those requesting rental vehicles should be prepared to furnish travel order and work order / account numbers," he said.

Warren Walker Dies in Crash

Warren G. "Sam" Walker, a senior flight test instrumentation engineer in Convair's Dept. 545-3 and CRA Pistol Club commissioner, was killed May 12 when Aero Spacelines' new G-101 "Mini Guppy" crashed on takeoff for its 12th flight during FAA certification tests at Edwards AFB.

Walker, 43, had been with Convair since 1954. He had handled flight test instrumentation for Convair 880, 990, and R-3Y aircraft and had served several years as leadman on the Standard ARM flight test instrumentation operations support program.

He previously had served as acting group engineer in the instrumentation systems group and had handled systems integration for the TEL-4 operational TV system for Apollo launch complex 39 at Merritt Island, Fla., during a 1½-year assignment there.

Convair had been providing flight test instrumentation and technical support for Aero Spacelines to assist in securing FAA certification for the "Mini Guppy" and a "Super Guppy" being completed for future use in delivery of DC-10 fuselage sections.

Walker is survived by his widow, Viola, and two children, William, 9, and Marjorie, 8. Memorial services were held last week at College Park Presbyterian Church with interment at Fort Rosecrans National Cemetery.

21 Finish Course On Mgt. Challenges

Twenty-one Convair division men have been awarded certificates on completion of a 12-session Convair Management Association-sponsored course in "Challenges for Management" conducted by L. A. Del Casale of Dept. 967-3.

They were O. W. Bell, S. A. Campbell, G. G. Christ, R. R. Eckbert, W. W. Frase, W. J. Golombek, R. I. Gordon, J. M. Guess, W. J. Ketchum, L. E. Kopp, A. T. Landry, H. R. Lawson, R. B. Maddox, C. P. O'Carroll, A. C. Oehler, H. K. Parsons, R. J. Parsons, W. H. Pfender, W. G. Phillip, Donald Stearns, and G. H. Zoellner.

Seventy-three division people also attended a four-session "Effective Executive" film series this month at the Kearny Mesa plant that was moderated by Harvey Seibert of Dept. 954-0.

Club Grants Funds For Artificial Kidney

A grant of $6,300 for use toward purchase and operation of an artificial kidney machine in the home of a Convair division employe was approved by the Convair Employes' Con-Trib Club committee in its May 14 meeting. The grant was to the San Diego County chapter of the Kidney Foundation of Southern California.

Also approved were grants of $1,500 to the Planned Parenthood Association of San Diego County for labor costs and $2,600 to the Lutheran Association for Retarded Children's Home of Guiding Hands for use toward purchase of therapeutic equipment.

ASTRONAUT VISIT—William A. Anders, right, member of first Apollo crew to circumnavigate moon and now executive secretary of National Aeronautics and Space Council, looks over Convair's 7th Space Congress exhibit with Dr. Donald Dooley, left, vice president-space programs, and Lyman Josephs, Convair vice president and general manager, during visit to Kearny Mesa plant.

Space Council Secretary Briefed at Convair Visit

William Anders, a member of the Apollo VIII crew which first circumnavigated the moon in 1968 and now executive secretary of the National Aeronautics and Space Council, visited Convair division's Kearny Mesa plant May 12 for an informal briefing on the division's aircraft and space programs and related activities.

NASC is composed of the Vice President, Secretary of State, Secretary of Defense, NASA administrator, and Atomic Energy Commission chairman. Anders reports directly to Vice President Agnew.

Functions of the council are to advise and assist the President on policies, plans, and programs; fix responsibilities of U.S. agencies engaged in aeronautical and space activities; and develop a comprehensive program of such activities.

Anders also sees helping the executive branch acquaint the public and Congress with benefits from the space program as one of his most important duties.

Meeting with Anders for lunch and discussion were Jack Bowers, division president; L. C. Josephs, vice president and general manager; Dr. D. A. Dooley, vice president-space programs; R. E. Adams, vice president-research and engineering; R. C. Seabold, consultant; K. E. Newton, launch vehicle programs director; and D. J. Jones and W. J. Geudtner of the space shuttle program office.

The division's work on space shuttle and related technology, the A-X aircraft proposal, new developments in aerodynamic engineering, problems in use of exotic metals in manufacturing and V/STOL aircraft were among subjects discussed.

Convair Son Helps With NEL Concepts

Dr. Lewis D. Chapman, son of Mr. and Mrs. L. R. Chapman (he's an estimator in Convair's Dept. 195-8), recently served with other staff members at Oak Ridge National Laboratory on a committee to establish concepts for National Environmental Laboratories.

A report by the committee resulted in Senators Howard Baker and Edmund Muskie introducing Senate Bill 3410, the National Environmental Laboratory Act of 1970, now referred to the committee on public works.

The proposed labs would develop, collect, and disseminate information on activities affecting the environment; perform tasks not within the jurisdiction of other research facilities; and present ecological-action alternatives with clearly defined costs and benefits to Congress and policy makers at all levels.

Chapman holds a doctoral degree in economics from the University of California and has been staff member of economic evaluations at Oak Ridge the past year.

Magnuson Honored With DSA Award

W. E. Magnuson, chairman of the Convair Craftsmanship program and chief of special projects in reliability control, recently was personally awarded a Defense Supply Agency Zero Defects Award plaque.

Capt. R. A. Schauffler, USN, commander of the Defense Contract Administration Services Region-Chicago, presented the award after Magnuson addressed 200 supplier firm representatives in a DCAS-sponsored conference in Chicago. He previously had given similar presentations in Indianapolis and Milwaukee.

Magnuson was cited in the award for "outstanding contribution to the Department of Defense/Industry relationship through your continuous promotion of Zero Defects principles and concepts and for your constant response to participate in Zero Defects seminars sponsored by industry and government . . ."

Be sure to use the ZIP code when addressing mail. It speeds up delivery!

Facsimiles Urged In Grade Reporting

Convair employes eligible for tuition refunds for college level, job related courses are advised not to mail in original grade slips when submitting refund requests.

Educational services cannot return grade reports and suggests a facsimile be submitted in lieu of the original.

Refund requests together with grades may be turned in to education services in Bldg. 15, 2nd floor, Lindbergh Field plant or mailed to mail zone 130-30 LF, attn: Mary Carter.

Problem of Pigeons Ripe For Good ES

The DC-10 project office is seeking help from Convair employes who would like to "moonlight" in a "Hints from Heloise" approach. Payment may be in the form of Employe Suggestion awards for quick thinking individuals.

Problem: Pigeons. More specifically — pigeon waste products. Solution: Get rid of pigeons. Employe Suggestion: HOW?

Discrepancy reports, on the average of 4½ a week, are being written and the problem needs to be solved. If you have an idea please call J. E. Cook, ext. 1745 LF.

CRA LEADERS—New officers of Convair Recreation Association, from left, are Steve Berry, president; Inez Schurr, secretary; Vince Bacon, vice president; and Arch Ellsworth, treasurer.

'Personal Stamps' Will Be Issued To Identify Work of Craftsmen

More than 5,000 people in Convair division factory and tooling functions will be issued "employe personal stamps" (EPSs) during the next 60 days for use in identifying work they perform as Convair craftsmen.

Each personal stamp, less than ¾-inch wide, will identify the individual by initials and clock number and will be in the form of a "check mark" inscribed with a "C" for Convair.

The EPSs will be used on production paperwork such as detail planning, factory assist work authorization, tool orders, production assembly planning, production test procedures and related reports, and rework. Use will be optional on paperwork for other tasks.

D. R. Miller, chief of process control quality engineering, said the first 250 stamps were issued to craftsmen in machine shop, Dept. 731, at Kearny Mesa and metalbond, plastics, and trim, Dept. 019, at Lindbergh Field.

Personnel in 38 other factory and tooling functions at LF, Plant 19, and KM will be issued stamps as they are available during the next two months. Non-operations people performing work on production hardware and those in some support functions also will receive them.

Design of the EPS and plans for implementing the program have been developed by a six-man working group appointed by L. I. Medlock, director of reliability control.

Miller served as chairman and other members were J. M. Bowers and L. C. Stuckey of reliability control, J. M. Farrar and R. B. Thompson of operations, and J. J. Jackson of industrial relations.

"The theme of the employe personal stamp program is 'I am a Convair craftsman and this is my best work, identified by my personal stamp,'" Medlock said. "The ultimate goal of the program is to increase the sense of individual responsibility which is essential to improved quality and performance."

Miller said supervisors will be briefed on use and control of the stamps before they are issued. The cap for each stamp holder will contain its own ink pad.

"The stamp normally will be used adjacent to the line entry that the employe has accomplished and will be affixed prior to inspection acceptance," he said. "Care must be taken to avoid obliteration of existing data and to keep the inspection column clear."

Miller said implementation of the EPS program is one of several actions being taken to help the division achieve its 1970 objective of improving Convair craftsmanship through personal awareness and concern.

Adventurers Plan San Gorgonio Trip

A Memorial Day weekend (May 29-31) hike and backpack to San Gorgonio summit is being planned by CRA Adventurers.

Club members will rendezvous Friday morning, 10 a.m., at "Poop-Out Hill" parking area and hike to High Meadow Springs, halfway up "Old Greyback," for overnight campout. The climb to the 11,502 ft. summit will continue Saturday morning with descent beginning that afternoon to Dry Lake where camp will be established. On Sunday descent will resume and the group will return to San Diego.

For information call trip leaders Harold Faulwetter, 281-5746 or Everett Ames, 459-6412.

ASSOCIATION LEADERS—Management of Convair Management Association for coming year will be responsibility of, from left, Bill Ochodnicky, treasurer; Herb Day, president; Jess Cook, board of directors chairman; Chuck Simmons, executive vice president; Art Medrano, financial secretary; and Gerry Nuss, recording secretary. New directors selected in recent election are Terry Kell, Jimmy Adamson, Carl Banke, and Robert Ratliff.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 KM. Deadline for next issue of GD/NEWS is June 2. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

ADVENTURERS—San Gorgonio weekend, May 29-31.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BALLROOM DANCING — Beginners dance class 7:30-9 p.m. Mondays.

BICYCLE CLUB — 1970 Cyclethon for Better Health, South Bay 4-mile ride, June 6.

BONAIR FLYERS — Meeting June 4, 7:30 p.m.

BRIDGE — Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB—Meeting 7:30 p.m., June 7, Photo Arts Bldg., Balboa Park.

CERAMICS—Meet Tuesdays and Thursdays, 9 a.m.-noon and 7-10 p.m.

CHESS—Play June 3, 7 p.m.

CHORUS — Rehearsals Mondays, 7:30 p.m.

COINEERS—Meeting 7:30 p.m., June 8.

COUNTRY & WESTERN MUSIC — Meet Thursday, 7:30 p.m., CRA Missile Park picnic shelter.

FENCING—Workouts and instruction, 7:30-10:30 p.m., Fridays.

GARDEN CLUB — Meeting June 3, 7:30 a.m., Floral Association Bldg., Balboa Park.

GUN CLUB — IRC trap and skeet shoot, May 31, Gillespie Field gun range.

HEALTH CLUB — Open 9:30 a.m.-10 p.m., Monday through Thursday; 9:30-a.m.-9 p.m., Fridays; 10 a.m.-5 p.m., Saturdays; "Women only" weekdays, 9:30-11 a.m.

HI-FI MUSIC — Meeting June 9, 7:30 p.m.

ICE SKATING—GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1.00 (includes skates).

JUNIOR SCIENCE—Meeting June 5, 7:30 p.m.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

ORGAN CLUB—Organ recital on Morton Organ, 9:30 a.m., June 7, at Fox Theater.

RADIO CLUB — Meeting 7:30 p.m., June 4.

RIFLE CLUB — Senior shoot 7 p.m., tonight (May 27); junior shoot, 9 a.m., June 6; Gillespie Field Range.

ROADRUNNERS—Meeting 7:30 p.m., May 28.

SAILING—Meeting, 7:30 p.m., tonight (May 27).

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m.

SKI CLUB—Meeting, 8 p.m., June 2.

SPECIAL EVENTS—CRA days at Sea World, June 6 & 7.

SQUARE DANCE—Dance, 8-10 p.m., Thursdays.

STAMP CLUB—Meeting, 7 p.m., May 28.

SWIMMING—Family swim night, 7-9 p.m., June 21, Mission Beach Plunge. Tickets at employe benefits outlets, 5-cents.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays, 10 a.m.-4 p.m.

TOASTMASTERS—Convair Toastmasters meet each Wednesday, 4:30. Dynamic Toastmasters meet Thursday, 5:30 p.m.

TRAILERS—Meeting 7:30 p.m., June 2.

WOMEN'S GOLF—Mission Bay tournament June 13, 9 a.m. tee-off time.

Camera Club to Hold Equipment Auction

CRA Camera Club's June 7 meeting will feature a special auction with members invited to bring surplus equipment to sell. Also scheduled at the 7:30 p.m. meeting in the Photo Arts Bldg., Balboa Park is an "assignment shoot" contest.

Winners in the second quarterly contest were Bob Pettyjohn, Jim Mildice, Art Mason, and Bill Paine in black and white prints competition. Dorothy Mildice, Sharon Williams, Jo Winsor, Kenny Rinker and Mason won the color slides division.

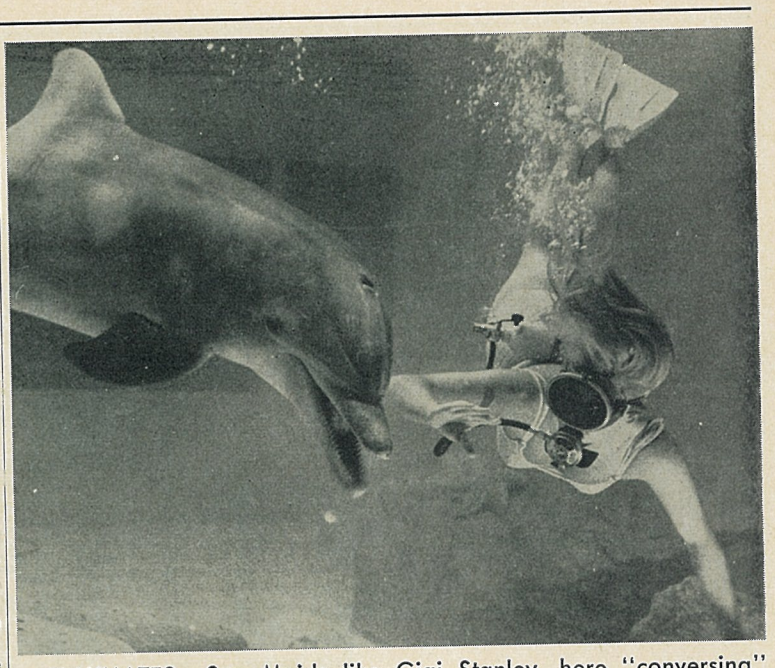
Variety of Items Held in 'Lost-Found'

Prescription glasses, sun glasses, watches, keys, sweaters, jewelry, and a pair of men's trousers are some of the items in Convair's "lost and found" boxes.

If you have lost any of these or similar articles, or wish to turn in found items, please check with industrial relations or employe benefits at the following locations: Lindbergh Field plant, employment office, Bldg. 16; AF Plant 19, Bldg. 4, near first aid station; Kearny Mesa plant, employe benefits office, Bldg. 8.

ANNUAL VAFB OUTING IS REAL "FISH TALE"

Members of the Convair Vandenberg Management Association brought in 80 abalone and 60 pounds of halibut, ling cod, cabazone, and perch fillets for their annual fish fry last month at Gaviota State Park. Sam Botta, president, garnered largest abalone for the feed—a 9¾-incher.



PLAYMATES—Sea Maids like Gigi Stanley, here "conversing" with dolphin Dilly in "Talk to the Animals" number, will be seen by many General Dynamics families June 6 and 7 during CRA "days" at Sea World. Reduced-price tickets, available through CRA outlets and CMA boosters, cover admission and special ride and are $2 for adults and $1 for 5-through-17-year-olds. Children under 5 will be admitted free.

Discount Tickets

A limited number of San Diego Chargers season tickets for four pre-season and seven regular season games in San Diego stadium will be offered through CRA at $77 and $60.50.

The $77 season tickets will provide upper deck seating between the 40 yard lines and the $60.50 tickets will provide corner end zone seating. Phone ext. 1111 KM for details.

* * *

Convair Management Association and CRA will offer reduced-price tickets for the 7:30 p.m. July 10 baseball game between the San Diego Padres and Los Angeles Dodgers for General Dynamics employes and friends.

Tickets for reserved seats in the loge section at San Diego Stadium will be $1.50 (a $1 saving) and will be available at CRA outlets and other plant locations to be announced. Included with each ticket purchased will be an entry in a free drawing for a $500 vacation trip to location of the winner's choice.

* * *

Tickets for the Falstaff 400-mile stock car race June 14 at Riverside International Raceway are available at $6 (a $6 saving) at all CRA outlets. Each ticket is good for the 100-mile semi-final race June 13 and the 400 mile main event the following day and also includes free parking.

* * *

CRA outlets have tickets for the Southern California Exposition and San Diego County Fair, June 24 through July 5 in Del Mar. Cost is $1.25 for adults (a 25-cent saving) and 50 cents for children.

Turf Club Trip Tickets On Sale

Tickets for the Convair Management Assn. "Day at the Races" June 14 at Caliente Turf Club are now available through all association boosters. Cost is $2.50 for adults and children (a $1.50 savings) and will cover margarita cocktails at noon and a deluxe buffet dinner at 1 p.m.

Free transportation will be provided from the Mexico side of the international border to Caliente for those not wishing to drive in Mexico. Buses will leave the border at 11 a.m. and will leave Caliente on the return trip at 5:30 p.m.

Normal street attire (including coat and tie for men and dresses for ladies) has been requested. Entrance to the Turf Club will be through the clubhouse.

Arrangements for the outing are under the direction of Mike Alianelli and Gerry Nuss of the assoication's social tours committee.

General Dynamics is an Equal Opportunity employer.

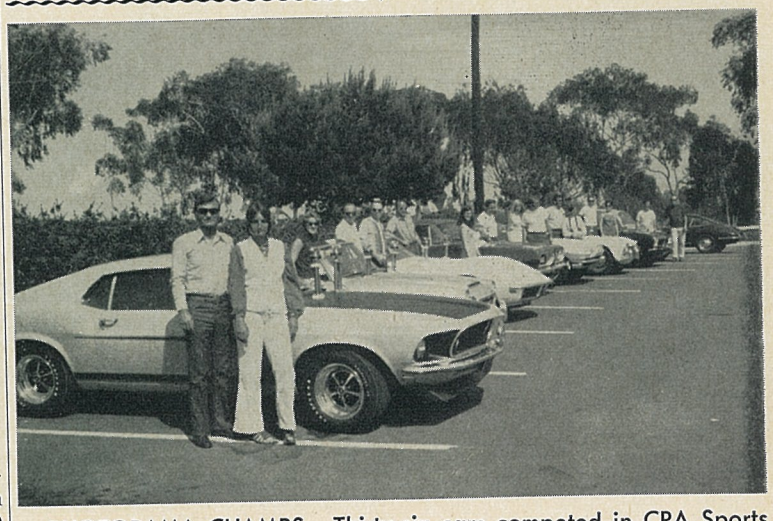
Fund Raising Rides Slated

CRA Bicycle Club is coordinating the South Bay segment of the "1970 Cyclethon for Better Health" sponsored by the American Youth Hostels, the Arthritis Foundation, and the American Heart Association.

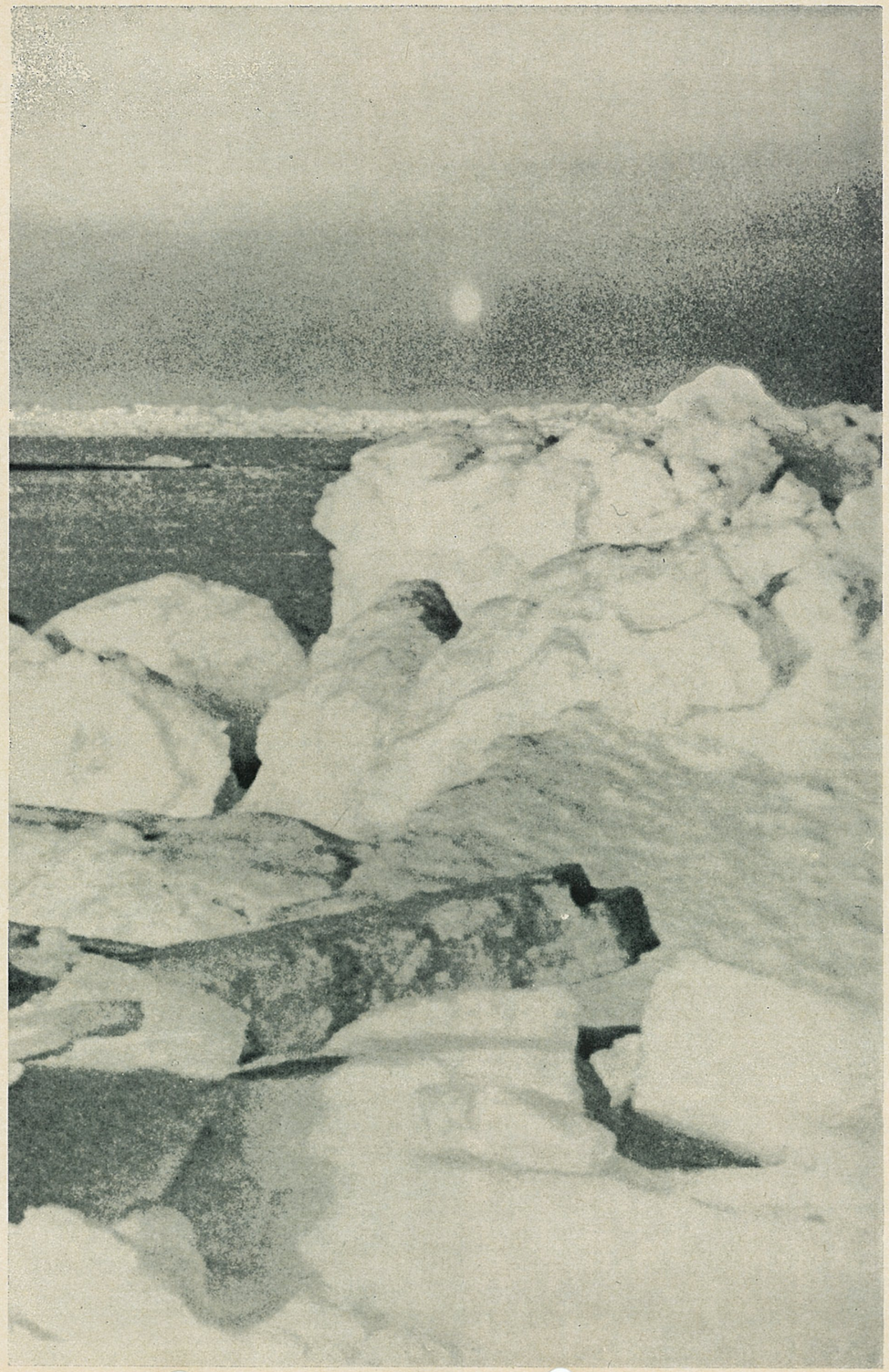
Convair families interested in cycling are invited to ride with the club Saturday, June 6.

Four rides have been scheduled: a 4-mile South Bay tour; a 9-mile Mission Bay ride, an 8-mile El Cajon/La Mesa trip, and a 4½-mile Coronado ride. Proceeds will be used for arthritis and heart disease research and to establish a Youth Hostel in San Diego.

Sponsor sheets and registration forms are available through Bob Williams, ext. 1148 LF or (home) 222-3560.



PHOTORAMA CHAMPS—Thirty-six cars competed in CRA Sports Car Club's annual Photorama fun rallye May 17. Trophy winners, from left, are Fred Vinyard and Debbie Cordell, Doug and Eileen Wigton, John Star and Sam Hobbs, Bob and Jeanne Berryman, William and Dorothy Normark, Ed Russ and Janice Mason, Joey and Craig Garman, and Douglas and Randy Webb.



The problem here isn't finding the oil, it's getting the oil out.

There may be more oil up in the Arctic than anywhere else in the Western Hemisphere.

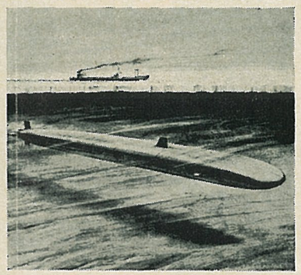
Exploring and drilling for it in sub-zero temperatures is tough enough. Having to force your way through yards-thick ice or lay down miles of pipeline in frozen tundra doesn't make things any easier.

Any way you look at it, getting crude oil out of the North is a matter of fighting the arctic weather.

Any way but one.

With a nuclear-powered submarine. We've built 37 of them since we launched the *Nautilus* in 1954. Our new concept is for a submarine tanker 900 feet long. It could economically and efficiently travel from the Arctic to ice-free North Atlantic ports the way *Nautilus* and other nuclear submarines proved it could be done. Under the ice.

It could transport oil the year round, at a sustained speed underwater, where bad weather and arctic surface ice conditions don't exist. It could even load its 170,000-ton cargo underwater. Larger submarine tankers carrying up to 300,000 tons of oil could be built from the same design.



It's another challenging example of how we can put technology to work solving problems from the bottom of the sea to outer space...and a good bit in between.

GENERAL DYNAMICS

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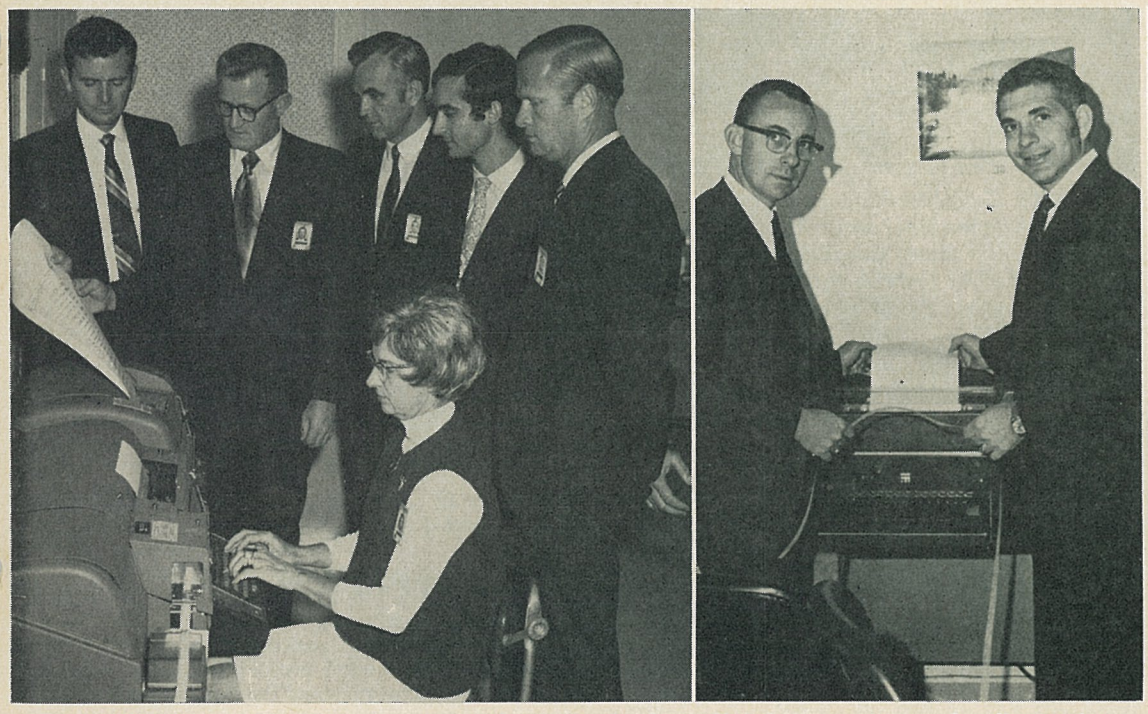


INAUGURATION—Doris Wentworth punches tape for first official message to go by direct teletype "line" from Convair division's Lindbergh Field plant to Aerfer plant near Naples, Italy. Present for inauguration of service, from left, were Jack Waller, supervisor of office services; H. E. Moose, director of material; Russ Babcock, manager of outside production and work assignment administration; Salvatore Marfella, Aerfer representative at Convair; and Doug Zink, group supervisor of office services. In photo at right are Will Buxton, left, Convair DC-10 purchasing agent at San Diego, and Pete Nico, Convair office manager at Aerfer, checking incoming message at Aerfer..

GD Share Owners Briefed by Lewis

General Dynamics plans to grow and improve profitability in both government and widening commercial fields in 1970, Board Chairman Roger Lewis said at the annual meeting of share owners in Fort Worth recently.

"We are determined to strengthen and enlarge our position in non-defense so as to bring about a better balance between defense and non-defense activities," Lewis said. "We believe we have an excellent base from which to do this."

Lewis said more than 80 per cent of GD sales last year were to military services and government agencies.

"But," he said, "the effect of reduced budgets, coupled with rising costs due to inflation and other factors has required intensive review of military hardware items. . . .

"Accordingly, we have initiated a painstaking review of our capabilities and of our objectives. We want to concentrate on those programs for which we have particular aptitude and knowledge."

Lewis said GD would continue to maintain its unique technological base while reducing costs as much and as rapidly as possible.

He said Corporate employment —spread over most divisions and subsidiaries — has been reduced from about 103,000 to 95,000 since the first of the year.

In reviewing major programs, the board chairman said that GD's winning the contract for definition and preliminary design studies of a space shuttle, coupled with additional Atlas-Centaur programs, ensures "an increasingly important part in this country's future space program."

He lauded the F-111 and commented: "Resumption of regular flights (following proof-tests) will make its critics better acquainted with the F-111's valuable qualities," he said. "Its mission capability is unmatched by any other airplane in the world."

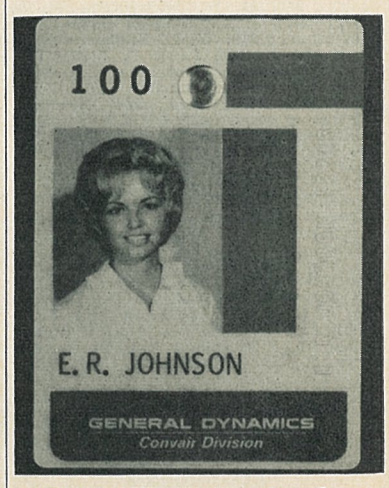
Lewis reported that McDonnell Douglas now has firm orders for 204 DC-10s, for which Convair division is producing the fuselage — except for nose and tail sections.

Other aircraft in development and production at Canadair include: the first of three CX-84 vertical and short-takeoff and landing aircraft; the CF-5 and NF-5; and the CL-215, an amphibious aircraft used to fight forest fires.

Production is continuing, Lewis noted, on three tactical missile systems: Standard Missile, Standard ARM, and Redeye. Last month, GD was one of three companies to receive funded study contracts for a new Air Force air-to-air missile called AIM-82.

At Electric Boat, eight attack submarines are under construction, and the division is working on the first of six Polaris submarines it will convert to Poseidon-missile capability. "Overhaul and conversion work has become

(Continued on Page 2)



NEW STYLE—Sample of new badge to be issued Convair division employes has individual's name and three digit department number in large type.

Max. Incentive Award Earned For C-5 Design

Convair division has received a $690,000 maximum incentive award from Lockheed-Georgia Co. by designing an empennage that is under a contracted target weight established in early 1966 by Lockheed.

R. W. Miller, C-5 program manager, said the award was realized through good engineering design approach, trade-off studies and excellent technical support by stress and weights in early stages of development.

Static testing of the empennage (tail section) is under way at Lockheed and its completion is expected by mid-summer.

Convair, under subcontract to Lockheed, builds the empennage for the giant C-5. To date, Convair has delivered 30 tail sections with an additional 51 on order.

The Air Force C-5 Galaxy, the world's biggest airplane, designed to carry tremendous, outsized loads, is a versatile aircraft with the ability to fly high and fast on long hauls, or low and slow as required.

Private Teletype Links Convair With Aerfer

A direct private teletype link has been placed in operation between Convair division's Lindbergh Field plant in San Diego and Aerfer's Pomigliano d'Arco plant near Naples, Italy.

Messages between the two locations are routed through facilities of several communications carriers and an Intelsat III satellite.

First "official" message sent over the line during inauguration ceremonies May 26 said:

"This is the first official transmission on the first dedicated teletype line between San Diego, Calif., and Naples, Italy. Members of the General Dynamics Convair DC-10 team join in sending their congratulations and best wishes to the Aerfer DC-10 team.

"The installation of these facilities represents a major step forward in the improvement of communications between our respective companies. This event marks another milestone in demonstrating the effectiveness of our joint efforts. Best Regards. Convair."

Among those in the Lindbergh Field written-wire room for inauguration of the teletype service were H. E. Moose, Convair material department director; Salvatore Marfella and Giorgio Tonozzi, Aerfer representatives at LF; Doug Zink and Jack Waller of Convair management systems' office services section, and

(Continued on Page 2)

Building Converted to Process Skins for DC-10 Fuselages

Convair division's Bldg. 75 at Lindbergh Field is now in use for processing big DC-10 trijetliner fuselage production skins after being enlarged by 15,600 square feet and outfitted with new processing tanks, drying and aging ovens, and paint spray booths at a cost of more than $1 million.

Operators on catwalks lower DC-10 and C-5A parts by overhead crane into the giant 12,000-gallon chemical processing tanks for a variety of cleaning, etching,

(Continued on Page 2)

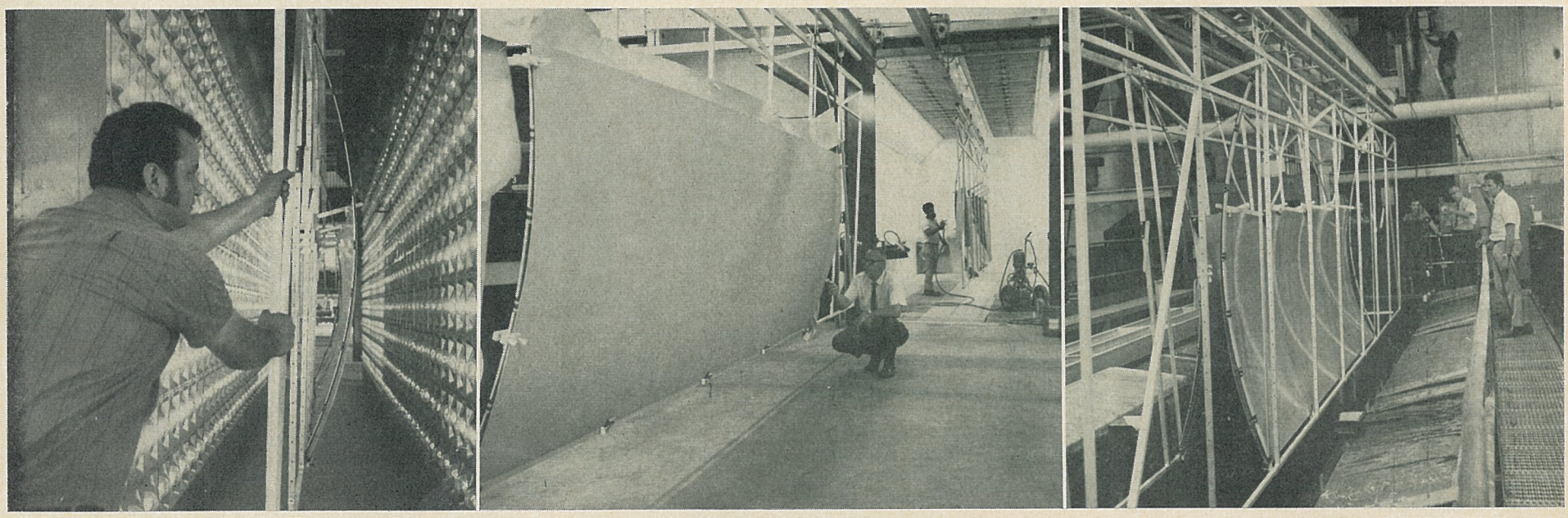
Convair Plans New ID Badges

Convair division employes will begin receiving new identification badges this week with easy-to-read names and departmental designations and color-coded plastic strips showing security clearances, salary status and work shifts.

S. R. Sharp, manager of industrial security, said all employes should have the more attractive and more durable new badges within two months.

The new badges will be issued through departmental supervision in exchange for current ones as they become available. Previously-taken employe photos are being used for economy.

(Continued on Page 2)



INCREASED CAPABILITIES—New material processing facilities are in use in Bldg. 75 at Convair division's Lindbergh Field plant. At left, Louis Gonzales pushes DC-10 fuselage skins into drying oven with 1,000 lamps. Center photo shows Bill Timm, industrial engineer, checking skins on "picture frame" that is used with overhead crane and monorail system for moving sheet metal through building. Painter in background is Robert Cowan. At right, skins are lowered, still positioned on picture frame," into 12,000-gallon chemical processing tank. On catwalk, from left, are Hector Padilla, operating crane, Timm, and Don Stewart, project engineer.

College Classes To Be Offered In-Plant During Summer

San Diego Community Colleges will offer five, 3-unit, summer session courses, in-plant, to both hourly and salaried Convair division personnel. All classes are scheduled for the Kearny Mesa plant, Bldg. 14, 4-7 p.m. beginning the week of June 29. Classes will end Aug. 20.

The following is a listing of course, meeting days, and instructors:

Industrial Blueprint Reading—Tuesdays and Thursdays, Ernie E. Chavez.

Shop Math — Mondays and Wednesdays, Ed C. White.

Introduction to Supervision — Mondays and Wednesdays, Hal M. Rubin.

Human Relations II—Tuesdays and Thursdays, Dave Chigos.

Effective Speaking—Tuesdays and Thursdays, Rubin.

Registration will be at the first class meeting. Classes will have a limited enrollment with pre-registration through Mary Carter of educational services, ext. 2564 LF advisable. Student fee for all courses is $1.

BANNER GROUP—Research and engineering department's Convair Craftsmanship sustained performance banner has been awarded for first quarter performance to systems technology Dept. 590-0. John Wild, left front, director of engineering technologies, presents perpetual banner to C. K. Anderson, manager of systems technology. Group was cited for outstanding effort in increasing business, meeting schedules, and participation in cost reduction and safety programs.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between June 1 and June 15.

Thirty-year: Dept. 002, J. Ramirez; 027, L. Nowak; 031, R. Morissette; 059, J. J. Loperena; 103, Martha C. Newbery; 170, R. H. Brown; 210, J. B. Hurt; 250, J. H. Tarvin; 401, E. R. Boucher, L. E. Ward; 454, C. L. Thompson; 507, W. S. Alcaraz; 509, S. W. Swenson; 511, F. D'Vincent; 566, K. R. Lemley; 780, R. L. Woods.

Twenty-five-year: Dept. 140, Joy S. Dillow, S. Petcher; 149, J. Gann.

Twenty-year: Dept. 031, Sherrell L. Bettis; C. A. Gonzales; 059, W. J. Kelly Jr., V. L. Waitman; 109, Roxie S. Smith; 250, D. W. Hauenstein, M. L. Wise; 451, J. C. Krugle; 507, J. R. Picklesimer; 518, W. C. Engleman; 533, R. M. Zeich; 565, Janet C. Vieth; 835, R. M. Alexander, Josephine C. Gomez; 842, Billie W. Barnett; 860, J. H. Johnson, Doris M. Parker; 960, Lynn E. Lightbown.

Fifteen-year: Dept. 015, J. R. Laccabue Sr.; 027, E. G. Repp; 046, J. E. Martin; 059, O. H. Fritz, F. W. Kelly; 142, T. L. Lamoureux Jr.; 145, J. E. Dorsch; 250, M. W. Crumm; 400, J. L. Carr, D. H. Garner; 543, T. J. Empert; 574, T. M. Wooster; 588, D. L. Johnston; 598, L. F. Weikum; 953, L. S. Peterson; 985, J. W. Wilson; 980, W. C. Weese; 999, T. H. Clovis.

Ten-year: Dept. 015, A. H. Burnett; 046, J. L. Alvarez, J. A. Griffith, J. A. Kelly Jr.; 059, G. W. McCrary; 101, Nancy A. Prettyman; 130, P. R. Allgire; 250, J. L. Glover; 451, C. R. Dyer; 511, J. P. Hamm; 512, B. O. Roodhouse Jr.; 524, Dolores A. DeBoef, Janice T. Raguse; 567, H. E. Kennon; 731, W. F. Wyland; 950, Phyllis R. Files; 953, A. S. Paukovec; 979, H. A. Hartley; 989, Marcella C. Lawson.

ELECTRONICS

Thirty-year: Dept. 423, F. E. Maus.

Twenty-year: Dept. 582, J. A. May.

Fifteen-year: Dept. 711, R. W. Ern.

Ten-year: Dept. 205, K. Morgan; 617, G. A. Warila; 388, F. P. Stoklas.

Awards

CONVAIR

Employe Suggestion awards approved the week ending May 22:

R. M. Anderson, Dept. 578-5, $15; E. J. Bauer, 250-1, $285.40; D. E. Belchamber, 250-1, $224.83; R. L. Black, 507-0, $149.90; W. T. Black, 985-4, $15; A. J. Capuccini, 015-0, $28.40; F. M. Church, 046-0, $15; M. K. Clark, 059-7, $115.80; H. C. Cox, 144-1, $15; M. R. Douthit, 027-0, $15; F. O. Edwards, 143-0, $22; H. M. Gallant, 144-2, $15; D. J. Harms, 407-0, $15; W. B. Harrison, 979-4, $15; L. W. Howerton, 027-0, $46.80 (two awards); K. W. Hurst, 731-0, $15; W. Jenkins, 046-0, $15; W. W. Lacy, 149-3, $127.30; Gladys Lewis, 831-0, $29.30; R. N. Lewton, 962-3, $15; R. W. Marx, 780-2, $9.10; J. Maul, 131-1, $15; D. Melton, 149-6, $21.10; R. H. Miller, 027-0, $15; I. P. Mouet, 046-0, $15; C. E. Myers, 149-8, $15.

M. E. Nicolet, 250-1, $224.83; L. M. Omanson, 565-3, $15; J. E. Quigley, 508-0, $31.90; C. L. Richards Jr., 780-2, $9.10; M. J. Russell, 001-0, $15; R. W. Sanger, 507-0, $15; C. M. Smyth, 401-5, $31.90; W. R. Stout, 507-0, $15; S. A. Stowers, 831-1, $15; V. A. Sundfor, 951-6, $15; M. H. Thrasher, 001-0, $51.40; W. M. Tsunoda, 584-0, $15; E. M. Van Huss, 985-4, $15; W. C. White, 250-1, $224.83; E. Wong, 526-2, $51.30; E. L. Zimmerman, 149-3, $23.20; P. M. Giard Jr., 526-6, $15.

Employe Suggestion awards approved for the work-week ending May 28:

J. Baptista, Dept. 015-0, $15; E. C. Beach Jr., 507-0, $15; M. F. Benson, 027-0, $15; A. B. Billitti, 979-5, $17.70; L. A. Budzynski, 059-5, $38; R. A. Castillo, 020-0, $15; M. P. Dennis, 454-0, $69.80; J. C. Easton, 578-1, $49.40; P. Eramo, 820-0, $15; R. C. Fildes, 810-0, $15; K. W. Fitch, 964-2, $16.90; M. Formanek, 810-0, $30.80; O. H. Fritz, 059-5, $95; W. J. Gibson, 016-0, $424; H. J. Hastings, 985-3, $15; R. A. Herrera, 454-4, $73.30; E. J. Hine, 015-0, $15; P. Hood, 020-0, $18; E. H. Hussong, 001-0, $50.30; R. B. Jamieson, 019-0, $6.70; P. R. Jones, 019-0, $20; F. S. Lujan, 780-6, $16.45; J. E. Quigley, 508-0, $55.70; H. H. Richter, 524-5, $51.90 (three awards); L. I. Sartuche, 780-6, $16.45; S. E. Smerdon, 059-2, $33.40; F. H. Stine, 027-0, $25; V. J. Wassmuth, 979-3, $21.40.

Papers Presented

CONVAIR

ACTON—L., Dept. 596. "New methods of measuring smokestack effluent gases." University of California, Berkeley, Calif., April 27-28.

BARTLE—E. R., C. B. LUDWIG, W. GRIGGS, Dept. 596. "Remote sensing of air pollution." Optical Society of America, Philadelphia, Penn., April 7-10.

FAGER—J. A., Dept. 501, "Parabolic erectable truss antenna concept and applications." Deployable Antenna for Spacecraft Application Symp., El Segundo, Calif., April 9-10.

FENSKA—E. W., Dept. 562. "Effect of coil suppresion on two-coil latching Relays." Oklahoma State University Relay Conf., Stillwater, Oklahoma, April 28-29.

GRIGGS — M., Dept. 596. "Remote sensing of air pollution." Wyne State University, Detroit, Michigan, April 22.

HALL—D. K., Dept. 543, "An experiment with VHF staellite and HF-SSB communications for data collection from ocean data stations (buoys)." National Telemetering Conf., Los Angeles, Calif., April 28.

HAY—C., R. E. MOORE, Dept. 551. "Development of passive electrostatic field effect intrusion device." IEEE/NELC, San Diego, Calif., April 15.

HERSH—M. S., Dept. 572. "Secondary fabrication of boron/aluminum composite." Society of Manufacturing Engineers Conf., Detroit, Michigan, April 13.

KEITH—Norman T., Dept. 146. "Microfilming quality records." National Microfile Assoc., San Francisco, Calif., April 28-May 1.

Papers presented at Seventh Space Congress, Cocoa Beach, Fla., April 22-24.

BUTSKO—J. E., Dept. 583. "Space shuttle aerodynamic development studies."

HURLEY — M. J., LANFRANCO, M. J., Dept. 583. "Separation dynamics of multi-body clusters of lifting entry vehicles."

LYNCH—R. A., Dept. 581. "Space shuttle booster configuration features."

STEURER—Dr. W. H., Dept. 587. "Selected examples for space manufacturing processes, facilities and experiments."

Papers presented at the AIAA Test Effectiveness Conference, Palo Alto, Calif., April 1-3.

CARPENTER—C. F., Dept. 574. "The eyeball technique."

JAEGLY — R. L., Huntsville Operations. "Automatic Malfunction Analysis."

Papers presented at the AIAA Communications Satellite System Conf., Los Angeles, Calif., April 6-8.

LIPSCOMB—E. T., Dept. 541. "High power spaceborne TV transmitter design & tradeoffs.

WHITE — R. C., BARLOW, M. R., HUJSAK, E. J., Dept. 952. "Atlas/Centaur and Tital/Centaur for orbiting communications satellites."

BERGIN—P. A., Dept. 598. "Application of a TV broadcast satellite system to a domestic TC system."

FAGER — J. A., KINCADE, C. W., Dept. 501. "Potential of a communication satellite for Alaska and Mountain States."

"Cost Reducers"

CONVAIR

Cost Reduction Achievement pins presented:

Five-credit pins — W. F. Lindquist, Dept. 507-0; O. H. Fritz, Dept. 059-5.

Personals

CONVAIR

I wish to express my deep appreciation and sincere thanks to all the Convair people who were so very kind at the recent loss of my husband, Warren.

Mrs. Warren Walker

* * *

I wish to express my sincere appreciation to the many friends and coworkers for their kind expressions of sympathy on the death of my son, Daryl Ray West.

Mrs. Dixie Green

* * *

I wish to express my sincere appreciation to my Convair friends for the beautiful flowers and expressions of sympathy upon the death of my father, Paul Genco.

Anthony Genco

* * *

My mother and the other members of the family join me in thanking you for the lovely floral arrangement and expressions of sympathy at the loss of my father, Walter C. Brandt.

Patricia Hall
Dept. 524-5

* * *

I wish to express my gratitude and thanks to my co-workers at Convair who extended expressions of sympathy and thoughtfulness as a result of the loss of Virginia's mother.

Virginia and Arthur C. King
Dept. 059-2

* * *

Your kind expressions of friendship with cards and gifts were greatly appreciated at the time of my retirement. My sincere thanks to each participant.

Rolland (Red) Lathrum
Dept. 031

Births

CONVAIR

PROCTOR—Son, Keith Brendan, born May 7, 9 lbs., 4 ozs., to John and Brenda (Dept. 101-6) Proctor.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P. O. Box 1950, San Diego 92112.

Private Line Links Aerfer With Convair

(Continued from Page 1)

Russ Babcock of the material department.

The new communications link will provide direct written-wire service between Lindbergh Field DC-10 program and material department people and Pete Nico, Convair office manager at Aerfer. Above floor-level sections of the DC-10 fuselage are fabricated by Aerfer under Convair subcontract.

Moose said a considerable reduction in "turnaround time" for messages between the two facilities should be possible because of the teletype link. Capability for facsimile transmission of engineering drawings may be added later.

Matt Gandall, Western Union International (WUI) sales manager in Los Angeles, said messages from LF for Aerfer will go via Western Union to San Francisco, WUI to New York, AT&T to Etam, W. Va., and Intelsat III satellite to Fucino, Italy. Italcable will carry the messages from Fucino to Rome and Naples and SIP, a local carrier, from Naples into the Aerfer plant. Convair leases the intercontinental "line" through WUI.

Will Buxton, Convair purchasing agent for the DC-10 program Aerfer subcontract, said the direct teletype service will reduce the number of costly telephone calls to Aerfer and delay in getting teletype messages through over congested overseas commercial circuits.

"This will be a real help to us," he commented. "In addition to the convenience, our cost per message will be reduced because of the number required."

Messages relative to configuration, engineering, quality, shipment data and other subcontract administration items will be among those for which the line will be used.

Air mail from San Diego to Naples takes two weeks for delivery and regular mail and packages about 60 days.

Because of the nine-hour time differential, most of the incoming messages both in San Diego and Naples will be received on unattended machines while the written-wire offices are closed and will be available for processing at start of the next work shift.

"There will be a one-hour period between 7:30 and 8:30 a.m. San Diego time when we can talk directly to Nico each day and get clarification, if needed, on messages received overnight," Buxton said.

The written-wire room is conveniently located on the same floor as the Convair office at Aerfer. In like manner, the Aerfer representatives' office is near the written-wire room at LF.

Convair personnel at Aerfer, in addition to Nico, are Ed Carosella, contracts administrator, and Herb Mishler and Ralph Steele, both quality control representatives.

Building Converted to Process Skins for DC-10 Fuselages

(Continued from Page 1)

rinsing, neutralizing, anodizing, and sealing processes.

Seven of the tanks containing most toxic chemicals are equipped with "scrubbers" for drawing off vapors and trapping them in high-pressure water spray.

Aluminum sheets destined to become DC-10 skins are moved through various processing steps in Bldg. 75 attached, one on each side, to "picture frames" which are moved through the facility by an overhead bridge crane and monorail system.

Doublers, framework, bracketry, and even rivets are processed in the "new" building which adjoins Bldg. 2 production areas.

An infrared drying oven is equipped with 1,000 lamps of 250, 375, and 500 watts and has four "heat zones" and variable full-power time settings for precision temperature control during drying.

An aluminum aging oven was converted from a Scotchweld drying oven previously used during the Convair 880 and 990 aircraft programs. Electrical heaters provide heat at desired range for short or long-term drying cycles.

Three paint spray booths are in operation in the facility. Air fed into the booths is pulled in through large ducts from outside the building and "conditioned" by three heaters producing 6,810,000 BTU an hour.

The air enters the three spray booths at 55,000 cubic feet per minute—enough to put excessive stress on doors and walls of the buildings if it were not being pulled in from outside the structure.

Don Stewart of Dept. 250-2 has been project engineer for enlargement of the building and installation of the new processing equipment. Ends of the original building were moved back and the structure lengthened in the reconstruction process. Dale Sturhan handled design and rework of the aging oven.

Processing operations by Dept. 002 personnel are under the supervision of Gerry Cox, Bill Wolf, Fred Baxter, and Johnny Anderson.

Share Owners Told of Future

(Continued from Page 1)

increasingly important as the nuclear sub fleet ages and new missile systems are developed," Lewis said.

Lewis said the Corporation's proposal to the oil industry to construct large submarine tankers to transport oil from Alaska was "viable and economical." The Company is working with the oil industry and government agencies on the project.

The tempo of construction at Quincy shipbuilding division will continue on a number of surface ships at a high rate this year, Lewis said. Work includes three commercial ships — the first of this type built at the division—for Lykes Brothers Steamship Co.

Lewis said Stromberg-Carlson was continuing to do an "excellent job in making telecommunications equipment for use in advanced electronic products."

Stromberg DatagraphiX's new camera, which enables users to record data on microfilm or microfiche without costly external operations, has given GD a "competitive edge," Lewis noted.

The Corporation's newest acquisition, Asbestos Corp. Limited, is Canada's largest independent producer of asbestos fiber, Lewis noted. An expansion program at one of its mines in Thetford, Quebec, will increase ore milling capabilities by more than 11 per cent.

Convair Plans New ID Badges

(Continued from Page 1)

Each of the new five-layer plastic-laminate badges will have the employe's name typed in letters large enough to be read from five feet away. Also, a three-digit department number will appear at the top left.

A horizontal color tab at the top right will indicate salary status or assignment. All salaried personnel in engineering areas will be indicated by a blue bar. Supervision in non-engineering areas will be indicated by a red bar and other salaried personnel by a blue bar. Yellow, green, and white bars will designate work shift for hourly personnel.

Vertical color-coded strips adjacent to the employe picture will replace the color "dots" on present badges to show security clearance held. A purple strip will designate top secret clearance; red, secret; green, confidential; and white, no clearance.

The individual's name and employe number will be embossed in a vertical line to the right of the security clearance bar.

Sharp said this raised lettering, like that appearing on many credit cards, could be used in the future in automatic identification, data collection, or materials checkout systems. The division has no present plans for installing such systems, however.

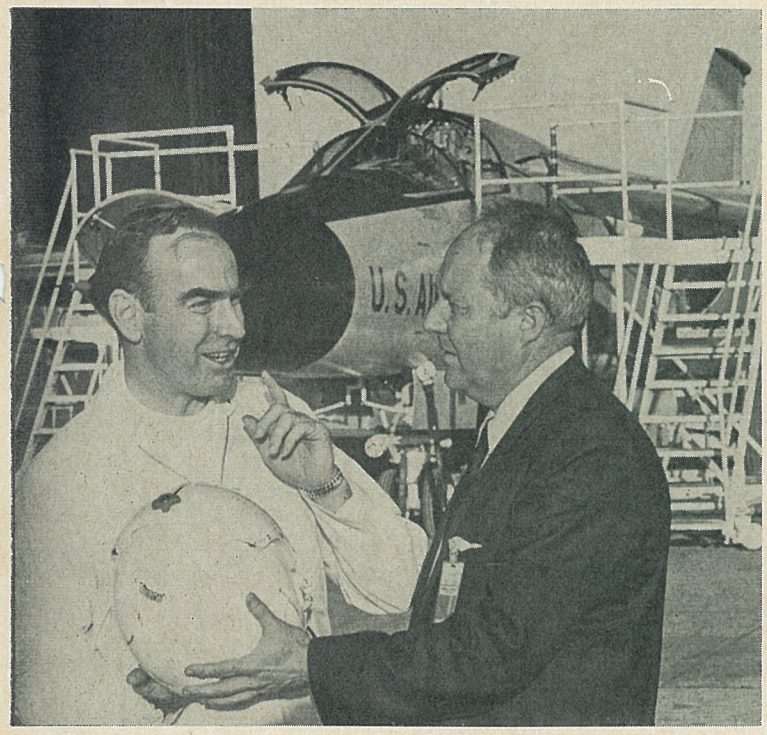
The new ID badges will not carry birthdate, sex, height, weight, and color of hair and eyes designations like present badges.

A Convair division return address and a warning will appear on the back of the new badges.

The warning states: "Section 529 Penal Code of State of California prohibits use of this badge by any other person. This badge is not to be altered or mutilated in any way, such as attaching any kind of a pin, insignia, etc."

"It's very important that employes of a firm doing Department of Defense work not lose or mutilate their badge," Sharp said. "If a badge is lost or stolen, it must be reported immediately. A fee is charged when a replacement is issued."

Texas Congressman Reveals 'The True F-111'



FOR THE DEFENSE—Rep. James Wright is shown with J. T. Cosby, Fort Worth division vice president-111 programs.

F-111 'Most Extraordinary Warplane Ever Fashioned'

BY JIM WRIGHT

(Rep. James C. Wright represents the Twelfth District of Texas in Congress. The accompanying article by him appeared May 20 in the Washington Post.)

Lest I appear to fly under false colors, let me acknowledge in all candor that I have a legitimate parochial interest in the F-111. It is built in my district and some 20,000 of my constituents are employed in its production. It galls hell out of me to see them and their product made the whipping boy of demagogues and the butt of street corner humor.

Like Dr. Jekyll and Mr. Hyde, there are two F-111s.

One is the real, honest-to-goodness, nuts and bolts machine. By any measure, it is one of the most extraordinary warplanes ever fashioned. It can do more things better than any other aircraft our defense industry has built. This real F-111 is little known outside the Air Force.

The other F-111 is the monster of popular fantasy, well known to the public—conceived in the mind of a senior senator, fabricated in a stormy set of hearings, flight tested on page one, and sent shivering into combat on the Huntley-Brinkley report.

For whatever reason, the substantial array of important and affirmative facts has escaped general publication. The facts are far from unimpressive.

Forgive me, then, if in the interest of balanced coverage I spend a few paragraphs accentuating the positive.

(1) Contrary to popular misconception, the F-111 has the best safety record (number of accidents per hours flown) of any new military aircraft built in this country since the early 1950s.

(2) It surpasses more of its original specifications than it fails, meets fully 99 per cent of them, including the most important ones.

(3) The F-111 can carry three times the bomb load for better than twice the distance as the next best tactical bomber in our inventory.

(4) Before the bombing of North Viet Nam was discontinued, an F-111 detachment flew more than 50 combat missions there—all of them at night, 80 per cent in weather so bad no other aircraft were operating. Bombing accuracy was better than our other planes were achieving in daytime.

(5) Air Force pilots who have flown the F-111 are enthusiastic about it. The Russians apparently are impressed by its capability. It is the only American aircraft over which Soviet representatives have expressed specific concern in the SALT conferences.

(6) The House Armed Services Committee last week reported that no other aircraft in our inventory can "adequately substitute" for the F-111 and officially invited the Defense Department to order more.

Each of the above facts is part of the record, undisputed and clearly verifiable. Yet, most Americans have never read them. Professional viewers-with-alarm continue to refer to the swing-wing plane by such unfactual terms as "dangerous," "defective," and "subpar."

Take the question of safety. Many Americans, intelligent and otherwise well informed, understandably think that the F-111 has a bad safety record—not just bad, but very bad.

The facts reveal the exact opposite. It has the best safety record of any aircraft in the Century Series—nine of them, beginning with the F-100. This has been true at every stage of its development—for the first 5,000 hours of flight, for the first 25,000 hours, for the first 40,000—and it's true today.

The F-111 has had a total of 18 serious accidents—21 if you count the three lost in Viet Nam. Each of these has been headline news throughout the nation. What isn't commonly realized is that, for the comparable number of hours in flight—and none of this in combat—the F-106 had 22, the F-105 had 34, the F-102 had 40, the F-104 had 51 and the F-100 had 59, more than three times as many as the F-111!

Or consider the matter of performance. Air Force experts say the F-111 is the best aircraft in the world today for delivering a payload on a heavily defended target, at night as well as daytime, and in the very worst of weather.

A revolutionary terrain-avoidance system, one of the F-111's numerous leaps forward in technology, permits the plane to fly in "on the deck" under enemy radar, avoid mountains or structures not visible to the pilot, and be gone before defending anti-aircraft can zero in on it.

The value of this unique all-weather capacity? In Asia, targets are weathered in as much as 70 per cent of the time in certain seasons. In Eastern Europe they may be protected by weather as much as 40 per cent of the time. The Battle of the Bulge in World War II was mounted during 19 straight days of weather so bad that Allied planes were grounded.

Or think about cost effectiveness. Four F-111's, on a 1,000 mile trip without refueling, can drop a given number of bombs on an enemy target. The exact figure is classified. But to deliver the same bomb load to the same distance, without F-111's, would require a total of 31 different aircraft including tankers, radar scramblers and fighter escorts.

The four F-111's can be maintained and operated for $5.2 million a year. The retinue necessary to perform the mission otherwise costs $37.8 million in annual operation and upkeep — seven times as much.

This plane has cost a lot of money to develop, no question about it. The aircraft now being delivered are running about $8.7 million each. If you go back and calculate all that we've invested from the inception of the program and divide it by the number of delivered aircraft, the average unit cost to date comes out at a lot more.

The basic fact is that the big cost in any new airplane embodying sophisticated technology is in the research and development phase and in the tooling up. Witness the C-5A. Let's face it, there just aren't going to be any more cheap new airplanes.

The only way this nation can realize cost effectiveness in any aircraft procurement program is by building enough to do the job for which the program was devised. The early estimate of $3.8 million a copy, on which the McClellan Committee harps, was based on a buy of 1,700 planes to be delivered at the rate of 24 a month. We're currently buying at the rate of eight a month.

With the F-111, we're just now approaching the pay-off stage on our investment. For an additional $1.5 billion—less than one-fourth the amount we've already put in the program—we can secure the additional 324 planes which the Air Force considers necessary. Average cost: $4.6 million, which compares favorably with unit cost on older aircraft of substantially less capability.

As for the investigation, it must be obvious to all who've followed it closely that Senator McClellan shot his arrow seven years ago before the first F-111 was even off the drawing board. Ever since, he's been trying doggedly to paint a target around the spot where the arrow hit. He reached his conclusion and then went searching for facts to support it.

His real target, of course, is Bob McNamara. The Senator is determined to crucify the former Secretary upon the gavel. If a needed warplane gets in the way, well, C'est la guerre.

Recent F-111 criticism centers around selective comparisons between actual performance and the optimistic goals originally set by DOD sponsors. That's like measuring one of us mature mortals against the man his mother hoped he'd be. I'd hate for Senator McClellan to gauge me by that yardstick!

More to the point, every aircraft ever built would suffer by the same comparison. None has met all its design objectives. The farther we set out to stretch untried technology, the bigger the expected "short-fall." The amazing fact is that the F-111 meets more of its design specifications than any other modern aircraft.

In the real world we judge an article's worth by comparing it with similar things, not with what its inventor first hoped to achieve. We are balefully told, for example, that an F-111 requires about 770 more feet for take-off than its planners hoped. But the gloating detractors gloss over the more significant fact. The F-111 requires only one-half—repeat, one-half—the take-off distance consumed by any other combat aircraft with the single exception of the F-4, and less than the F-4.

And the landing distance, equally significant but never mentioned in any news account I've read, is 19 per cent better than the specifications called for!

On balance, the F-111 is a damn fine airplane. It's time this fact were more generally recognized.

LEAP AHEAD—Lloyd Bergeson, general manager of Quincy Shipbuilding division, right, receives trophy signifying that his division during 1969 led all others in "most improved" category for performance in Employe Suggestion program. Making presentation is Algie A. Hendrix, Corporate vice president.

Separation and Firing Of SRAM Called 'Smooth'

A SRAM (short-range attack missile) was successfully launched from FB-111A No. 5 May 20 over White Sands Missile Range at Holloman AFB, N. M.

Neal Anderson, Fort Worth division test pilot, and Charley Cox, systems operator, made the launch at 1,000 feet altitude and traveling at Mach .55.

Jim Goodman, FB-111A weapons integration project engineer, described the launch as a "long-range ballistic trajectory."

The missile's rocket motor ignited shortly after launch, propelling the missile into a maximum range trajectory to the target area. The missile was not equipped with a warhead.

"From all indications," Goodman said, "the firing was very successful. The separation and firing went smoothly, and the missile impacted about as expected."

The mission is the second in a series of launches to be made from No. 5 during the next two years. The first firing of a "live" SRAM took place earlier this year.

"The launches will be made at various altitudes and speeds," Goodman emphasized. Fort Worth test crews will make the launch flights, which will originate from Fort Worth.

Trepang Trials Prove Success

The USS Trepang has successfully completed her first sea trials. With the Trepang the Navy now has a total of 88 nuclear submarines, of which 47 are of the attack type and 41 Polaris. During the trials the ship steamed at full power both surfaced and submerged.

VAdm. H. G. Rickover, USN, acting for the U. S. Atomic Energy Commission and the U. S. Navy was in charge of the trials. The Trepang, commanded by Commander Dean R. Sackett, USN, of Beatrice, Neb., left her builder's yard, Electric Boat division, on May 24 for the trials.

Apprentices Attend Annual Ceremony of Completion

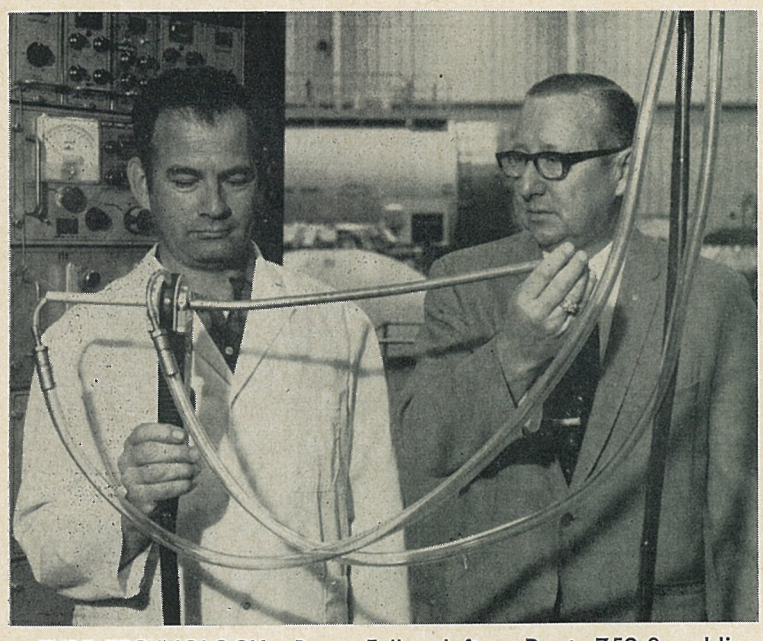
Four products of the Convair division apprenticeship program were among 130 apprentices attending the 29th annual Apprenticeship Completion ceremony and banquet at the El Cortez hotel last month.

They are Donald E. Nowicki, electronics technician, Pat H. Reaves, inspector (electronics), Walter L. McCollum, machinist, and Robert J. Bordelon, tool and die maker.

Nowicki and Reaves have completed their 8,000 hours (four years) of on-the-job training, as well as 340 classroom hours at San Diego Evening College, and are full-fledged journeymen. Bordelon and McCollum will assume their new status soon.

Nearly 30 young men are presently in the Convair apprenticeship program, at various stages of training.

BANQUETERS—Pictured at annual Apprenticeship Completion banquet in San Diego are, from left, Jack Croft, Convair chief of educational services; Robert Bordelon, Donald Nowicki, Walter McCollum, Pat Reaves, Wayne Turner, Convair apprenticeship program coordinator.



TUBE TECHNOLOGY—Bruce Fuller, left, a Dept. 759-0 welding technician, demonstrates new technique for welding of tube joints to replace mechanical fittings on launch vehicles. System was developed in part by W. M. Walker, right, a Dept. 491-0 manufacturing development engineer.

Welding Will Replace Fittings On New Centaur B-2 Test Tank

A special welding system has been devised by Convair division for permanent welding of tube joints to replace mechanical fittings on pneumatic lines and similar "plumbing" on space launch vehicles.

Tests show the weld where the tube sections are joined by the process are stronger than the original tubing material. The permanent weld reduces both leakage problems and weight of the launch vehicle.

W. M. "Wally" Walker and Robert G. Baumann, both Dept. 491-0 manufacturing development engineers, devised the welding system, using modified and standard equipment, in an independent research and development (IRAD) project. Welds produced have been undergoing tests for several months.

The apparatus now is being used for the first time in actual launch vehicle fabrication to join sections of pneumatic lines on the Centaur B-2 test tank. The B-2 is to be delivered to NASA later this month for use in the new Spacecraft Propulsion Research Facility (B-2) stand at Lewis Research Center's Plum Brook Station in Sandusky, Ohio.

Walker redesigned a cutting wheel to produce chipless, straight cuts in tube ends and modified a tungsten-gas spot-welder with digital counting controls, tachometer feedback motor control, and weld-current control sequencer for use in the tube welding.

L-shaped weld inserts, positioned on the outside diameter of the tube, are used in making each weld. A motor-driven control panel, originally used to feed filler wire to the spot-welder, is used to drive an Astro-Arc weld head capable of welding ⅛ to ⅞-inch tubing.

Welding current is pulse-controlled to prevent excessive heat buildup as the weld progresses around the tube. A gas pressurization purge panel is used to control pressure differential between the weld-head gas and back-up gas inside the tube.

C. E. Roye, manufacturing development supervisor, said extensive tensile, burst-pressure, and fatigue tests and die-penetrant and x-ray examinations of welds made in the IRAD program "proved out" value of the system.

"Permanent joining of tube sections to replace unions and B-nuts should be considered in design of future spacecraft to reduce weight and eliminate maintenance problems," he said.

Bruce E. Fuller, a Dept. 759-0 welding technician, is handling welding tasks on the B-2 tank, using the new welding system.

R. J. Moberly, a Centaur program office engineer, said the B-2 tank will be delivered to NASA without engines and will be outfitted later at Plum Brook with engines from the old Centaur 5-C.

Centaur 5-C was used last December in a "hot firing" for validation of systems at the B-2 stand **(GD/NEWS, Jan. 21).** Research and development-type tests to be performed in the facility will be designed to support the D-1 Centaur and other space vehicle programs of the future.

Chambers Wins 'Boss Night' Title

General Dynamics was well represented at a recent American Business Women's Association "Boss Night" meeting held at the Royal Inn.

R. W. Chambers, group supervisor of Convair's LF program control department, was named "Boss of the Year." Chambers was nominated by his secretary, Thea Austin, who serves as vice president of the association.

Laura Hammer, association president, nominated her boss, A. B. "Burt" Mercer of Convair's KM plant parts release group, who was runner-up.

Mistress of ceremonies for the meeting was Cecile Hoyle of Stromberg DatagraphiX.

B-24 Buffs to View Documentary Movie

Members of the Liberator Club and others interested in the B-24 of World War II may see the hour-long documentary film "The Lady Be Good—Mystery Bomber of WW II" at 8 p.m. tomorrow (June 11) in the Aerospace Museum, Balboa Park. A $1 donation will be requested to purchase a copy of the film for the museum library.

A no-host social hour is scheduled at 7 p.m. A collection of B-24 photos taken at an air base in England in 1943 by Life Magazine photographers will be on display.

More Meal Ticket Winners Announced

Winners of free meal tickets for Employe Suggestions during the third and fourth weekly drawings have been announced by E. D. Heller, manager of cost reduction and value control for Convair division.

First-time 1970 suggesters receiving tickets for free lunch at a plant cafeteria were H. F. Clark, Dept. 059-2; R. L. Becker, 059-5; D. F. Petty, 015-0; J. J. Zamiska, 400-2; R. C. Ribby, 842-0; L. A. Brugger, 149-8; J. A. Lessing, 954-1; R. G. McKellips, 780-4; K. K. Rose, 130-6; and M. E. Walker, 149-3.

Repeat ES submitters selected were E. B. Roberts, 810-0; J. M. Leech, 149-8; M. E. Nicolet, 250-1; H. E. Beard, 015-0; W. C. White, 250-1; R. E. Chapman, 046-0; R. H. Feeley, 810-0; O. H. Fritz, 059-5; C. E. Mifflin, 144-3; and Gordon Olcott, 059-4.

Five Selected For Club Grants

Three Convair division sons and two daughters have been selected for Convair Management Association $500 scholarships to go toward college expenses this fall.

They are: Donald E. Risty II, son of Donald E. Risty, instrumentation engineer; Glen A. Evans, son of Harold L. Evans, graphic designer; James R. Leger, son of Dr. Robert M. Leger, instrumentation engineer; Ruth Reinman, daughter of William A. Reinman, quality engineer; Robyn Watson, daughter of Gene K. Watson, tooling supervisor.

"Scholastically and in all other ways this is an unusually outstanding group of scholars," Wayne Turner, manager of the association program, said. "Two have perfect grade averages for their high school years and the other three are only a few points below it."

Young Risty attended Point Loma High and will enter CalTech this fall; young Evans attended Patrick Henry and plans to enter University of California at San Diego; young Leger, also from Patrick Henry, will enter CalTech; Miss Reinman, soon to graduate from Crawford High, will attend University of California, Santa Cruz; Miss Watson, from Clairemont High, will attend University of California at San Diego.

The scholars will be honor guests at tonight's (June 10) Management Associaation meeting.

UC Offers Four Classes at KM

Four summer quarter University of California Extension courses will be offered at Convair division's Kearny Mesa plant.

"Introduction to Physical Transport Phenomena," a 3-unit course, will be held 5-8 p.m., Mondays and Wednesdays, June 22 through July 20, with Dr. Jan Raat of aerodynamics as instructor.

A 4-unit "Computer Programming" course with Fred Schwend of management systems as instructor will be held 5-8 p.m., Tuesdays and Thursdays, June 23 through July 30.

John A. Hicks of data systems will teach "Introduction to Information Processing and Computer Programming," 5-8 p.m., Tuesdays and Thursdays, June 23 through July 30, a 4-unit course.

"Leadership Principles and Practice" will meet Fridays, 5-8 p.m. and Saturdays 8 a.m. to 5 p.m., June 19 through July 11 with Dave Chigos of educational services instructing the 4-unit course.

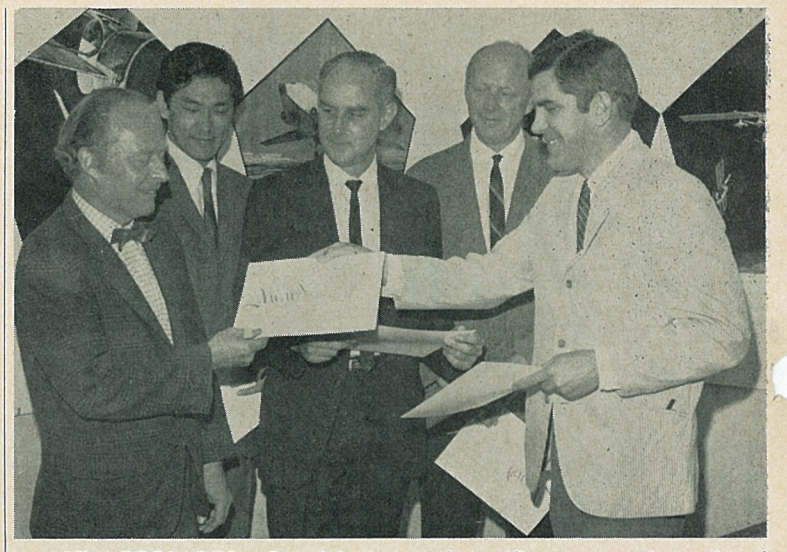
Details on each, prerequisites for enrollment, cost, classroom location, and enrollment forms may be obtained by calling educational services, ext. 2564 LF.

$10,000 Will Help Summer Campers

Members of the Convair Employes' Con-Trib-Club in a May 28 meeting approved a $10,000 grant to the Community Camping Counsel of United Community Services for summer camperships for children from low-income families.

Receiving funds for the camperships will be Bayside Settlement House, Boy Scouts of America, Camp Fire Girls, Girls Scouts of the USA, City-County Camp Commission, Retarded Children's Association, Sisters of Social Service, United Cerebral Palsy, eight YMCAs, the YWCA, Girls' Club of San Diego, and several Boys' Clubs in the county.

The Con-Trib also granted $2,700 to Community Resources and Self Help, Inc., for use toward purchase of a refrigerator-freezer, range hood and fan, 12 twin-size beds, and two month's cost for food and housing for Parolee House.



ART ACCOLADES—Receiving award certificates won in national Technical Illustrators and Management Association competition from Burt Brockett, right, supervisor of Convair art and editorial section at Kearny Mesa, are (from left) Willis Goldsmith, Gary Hamada, Jack Davis, and Roy Gjertson. Convair received six awards for exhibit, film, calendar, and poster designs.

Convair Art Creations Win Seven TIMA Awards

Industrial graphics produced by Convair division's art and editorial Dept. 517-0 won seven awards in the recent 17th annual national Technical Illustrators and Management Association competition in Los Angeles.

"Spacesetters of the future," an igloo-shaped aluminum and plexiglass General Dynamics exhibit created by the section primarily for the AIAA annual meeting won first place award in three-dimensional graphics.

Roy Gjertson, Len Parker, Jack Davis, Gary Hamada, and Burt Brockett all had a hand in its design and production.

A supervisors' calendar with air and spacecraft illustrations by Gjertson depicting "35 years of Convair Craftsmanship" won first place in advertising specialties and a math contest certificate designed by Ron Bergner took first in the institutional graphic design category.

Third-place certificates went to Bergner for a two-color math contest poster, to Willis Goldsmith for a "Save your elbow bending for after work" safety poster, and to Gjertson for multi-color illustrations in the supervisors' calendar.

Art by Gjertson and Davis used in a space shuttle film aired by a national TV network during the Apollo 12 mission coverage received honorable mention in the motion pictures-sound classification.

Brockett, supervisor for the art and editorial section at Kearny Mesa, said Convair had 17 graphic arts creations exhibited for a month at the TIMA show in the Museum of Science and History in Los Angeles.

Bergner's math certificate also was selected recently as one of 50 international merit winners in an International Typographic Composition Association competition.

* * *

The General Dynamics "igloo" display at the AIAA annual meeting was featured in the March issue of the Alcoa Aluminum Newsletter. An article accompanying a large color picture of the eye-catching creation called it "an extremely striking and informative exhibit that highlights the space-age resourcefulness of General Dynamics."

Convair Apprentice Appointed To Draft Advisory Committee

Amos Todd, Convair division apprentice machinist, has been named by Governor Ronald Reagan to a two-year term on the California youth advisory committee.

The committee is designed to provide a communications link between draftees or draft eligibles and the Selective Service and suggest changes in draft laws.

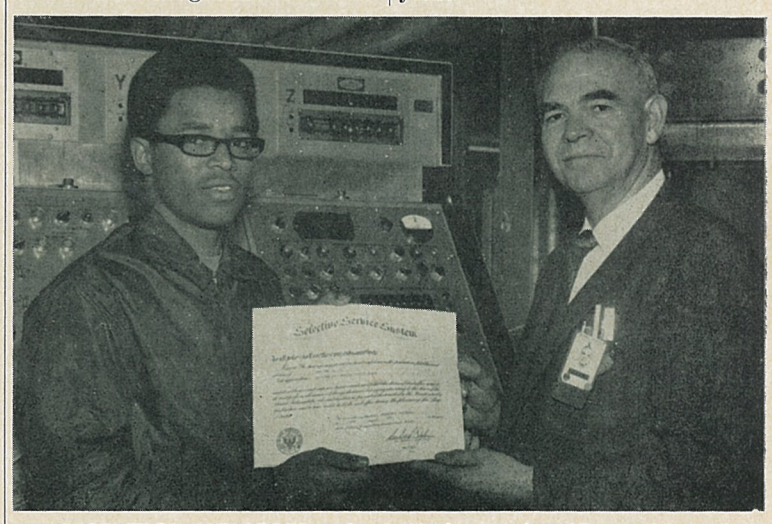
"We are in a good position to improve the draft system because we're not part of the establishment," Todd said.

The youth advisory committee program, formed under the direction of President Nixon, is now established in every state. Progress and suggestions are reported to the U.S. Congress.

Stan Krebs, machine shop group foreman and member of Convair's Joint Apprentice Committee, recommended Todd for the appointment. Several individuals from the San Diego area were interviewed, after similar recommendations, before Todd was named.

One of only 13 in California on the committee, Todd attended his first meeting in Sacramento and was presented his certificate of appointment. Future meetings will be held quarterly.

Todd joined Convair in 1966 as an aircraft machinist and entered the apprenticeship program that September. He expects to receive his journeyman rating later this year.



APPRENTICE HONORED—Stan Krebs, right, LF machine shop foreman, admires Amos Todd's certificate of appointment to California Youth Advisory Committee. Todd, an apprentice, was one of only 13 named to the committee instrumental in helping update draft laws and informing public of Selective Service regulations.

Value Engineering Workshop Cuts Cost of DC-10 Sections

Thirty-nine Convair division men and three Air Force officers received certificates last month for completion of a two-week value engineering workshop that applied VE principles to DC-10 aircraft components.

Eight teams, with Everett Lindem of educational services acting as instructor and workshop coordinator, evaluated their assigned projects by identifying the basic and secondary functions, determining what was necessary to perform the functions and finally how unnecessary costs could be removed.

Jack Hurt, DC-10 program manager, congratulated team members for their ingenuity which resulted in a potential net savings approximating the cost of a ship set of DC-10 sections.

Responsible for the bulk of the savings was Team 1, captained by Hugh McCutchen, Dept. 587. Their recommendations proposed elimination of costly machine time by switching from machined forgings to precision investment castings.

In commending team efforts, Hurt stressed the need for value engineering particularly as it applies to the DC-10 program. He pointed out that a value inventive clause is being considered for the DC-10 contract which will permit Convair to share in major cost savings changes.

R. A. "Bob" Bohler, Dept. 543; R. H. "Dick" Stromberg, Dept. 561; and T. P. "Tom" Emery, Dept. 400 served as project leaders.

Members of the workshop teams and their projects were:

Team 1, cargo door latch assembly—W. T. Askin, Dept. 202; G. W. Bartlow, 553; Phil Estrada, 027; Hugh McCutchen (team captain), 587; R. C. Risley, 531; Major M. G. Spallina, USAF.

Team 2, pneumatic nozzle pan and door assembly—A. F. Fujimoto, 512; Archie Gay, 584; C. A. Heskett, 533; C. E. Scott (team captain), 001; N. L. Taylor.

Team 3, forward pressure bulkhead access door—R. E. Bailey, 578; W. S. Cushman, 553; D. D. Paschen, 149; H. R. Peters, 027; D. W. Peterson (team captain), 533.

Team 4, forward pressure bulkhead access door latch—C. T. Harris (team captain), 149; G. B. Nicoloff, 584; R. T. Spencer, 578; C. E. Thornton, 059; A. Valencia, 511.

Team 5, power drive bogie assembly—G. L. Ford, 015; Joe Galian Jr., 541; Lt. Col. E. M. Kuebler (team captain), USAF; R. R. Pettyjohn, 572; J. J. Smith, 511.

Team 6, elevator sump—D. E. Allman, 027; Sy Goodman (team captain), 572; E. L. Johnson, 202; R. L. Ortega, 533; Capt. J. W. Sullivan, USAF.

Team 7, vent cover—J. S. Patterson, 149; B. O. Roodhouse (team captain), 512; L. D. William, 015; G. L. O'Barr, 572; A. L. Despain, 531.

Team 8, passenger door operating handle—J. C. Butler, 565; W. S. Cronan, 545, T. W. McGuire, 002; R. R. Schiappa (team captain), 407; O. F. Fatica, 532, N. S. Kourebelas, 587.

TEAM EFFORT—Members of cargo door latch assembly team in recent Convair division DC-10 Value Engineering Workshop evaluate possible redesign ideas to reduce production costs. Seated from left in foreground are Phil Estrada, Dept. 027; Major M. G. Spallina, USAF; G. W. Bartlow, Dept. 553; R. C. Risley, Dept. 531; Hugh McCutchen, team captain, Dept. 587 and W. T. Askin, Dept. 202. Standing are R. A. Bohler, left, project leader and E. A. Lindem, instructor and workshop coordinator.

University Chancellor to Speak At Convair Mgt. Assn. Meeting

Dr. William J. McGill, University of California-San Diego chancellor, will address the Convair Management Association tonight (June 10) at the Town and Country Convention Center.

The agenda includes installation of officers, award of scholarships to five Convair sons and daughters, and presentation of awards to association members in recognition of outstanding contributions to the association in the past year.

A social hour will begin at 5:30 followed by dinner at 6:30 p.m.

New officers and directors to be installed are:

Herb Day, president; Chuck Simmons, executive vice president; Bill Ochodnicky, treasurer; Art Medrano, financial secretary; Gerald Nuss, recording secretary; Jess Cook, board of directors chairman; Jim Adamson, Bob Ratliff, Carl Banke, three-year directors, and Terry Kell, two-year director.

Special awards from Jess Cook will go to Day, Simmons, George Cowan, Jim Dematteis, and Lyle Wood.

Charles Stadler, Dave Chigos, Dick Archibald, Don Menard, Joe Bowers, and Walt Hicks also will receive awards as will Paul Green, Don Evanson, Bill Chana, and Mike Alianelli.

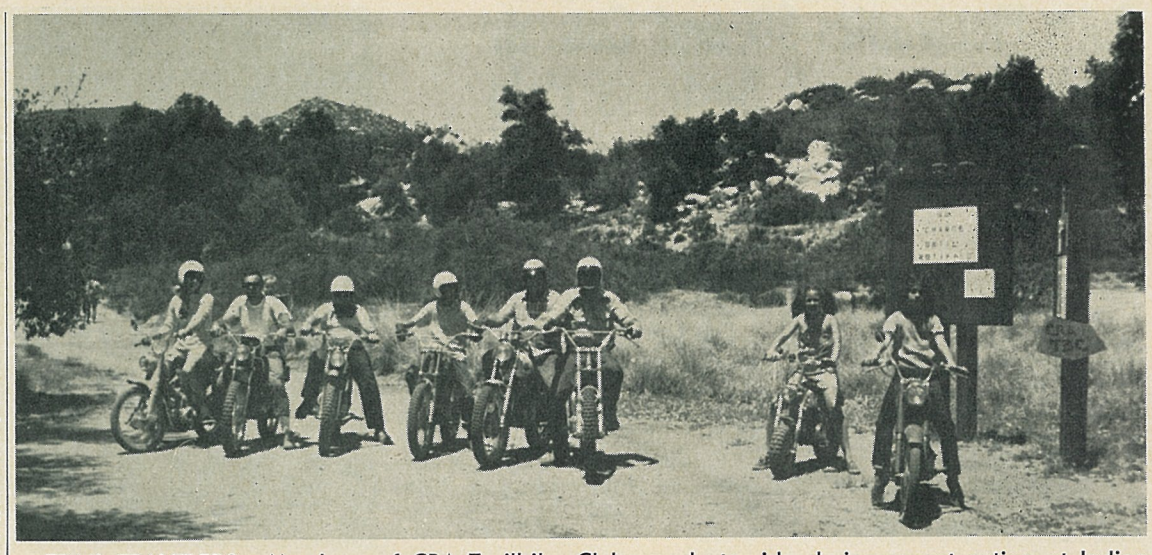
Director's award winners are Frank Berry, L. W. Smith, John Miller, Ken McCaffetry, Lloyd Boyles, Arthur Olderick, T. W. Ochodnicky, Jim Watt, D. O. Berhow, K. A. Sears, and W. G. Lux.

Additionally, a "Mr. Idea" award will be made to R. "Scotty" Young and Booster of the Year recognition to E. W. Ford. The "Man of the Year" will be announced at the dinner.

'Day at Races' Offers Four Dollar Bargain

Tickets are still available through Convair Management Association boosters for the "Day at the Races," Sunday (June 14) at Caliente Turf Club in Tijuana.

Cost is $4 and includes admission to the track, a social hour at noon, and a deluxe buffet dinner at 1 p.m. Free bus transportation will be provided from the international border at 11 a.m. for those not wishing to drive in Mexico.



TRAIL TRAVELERS—Members of CRA Trailbike Club, ready to ride during recent outing at Indian Flats campground, are, from left, Carolyn Souza, John Souza with Mathew, Rick Porter, Stan Langworthy, Odell Browning, Gene Langworthy, Tammy Souza, and Sandra Graves. Baja California trip is scheduled this weekend.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 KM. Deadline for next issue of GD/NEWS is June 16. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS—Meeting, 7:30 p.m., June 17.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BRIDGE — Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB — No meeting June 21. Next meeting scheduled for July 19.

CERAMICS — Meet Tuesdays and Thursdays, 9 a.m.-noon and 7-10 p.m.

CHESS—Play 7 p.m., June 17.

CHORUS — Rehearsals Mondays, 7:30 p.m.

COUNTRY AND WESTERN MUSIC—Meet 7:30 p.m., Thursdays, CRA Missile Park picnic shelter.

DELTA DIVERS—Meet tonight (June 10) 7:30 p.m.

FENCING—Workouts and instruction 7:30-10:30 p.m., Fridays, YWCA, 10th & C Sts.

FISHING CLUB — Lake Henshaw weekend, June 26-28. Potluck, 6:30 p.m., Meeting 7:30, June 16, Gillespie Field Clubhouse.

GOLF—Escondido Country Club tourney, June 27-28.

HEALTH CLUB—Open 9:30 a.m.-10 p.m. Monday through Thursday; 9:30 a.m.-9 p.m. Fridays; 10 a.m.-5 p.m. Saturdays; "women only" weekdays, 9:30-11 a.m.

ICE SKATING—GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Interstate 8 and Lake Murray Blvd., Flat rate fee $1.00 (includes skates).

JUNIOR SCIENCE — Meeting 7:30 p.m., June 19.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD — Work sessions each Wednesday, 7 p.m., CRA Missile Park.

PISTOL CLUB — Shoot 9:15 a.m., June 14, San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB — Meeting 7:30 p.m., June 18.

RIDING CLUB — All Western Horse Show and Gymkhana, June 21. Meeting 7:30 p.m. tonight (June 10).

RIFLE CLUB—Senior shoot 7 p.m. tonight (June 10). Junior shoot 9 a.m., June 20. Gillespie Field Range.

ROCKHOUNDS — Meeting 7:30 p.m. tonight (June 10).

SCULPTURE — Workshop sessions Mondays, 7:30-10:30 p.m.

SPORTS CAR CLUB — Car show 10 a.m.-5 p.m., June 21, CRA Missile Park. Meeting 7:30 p.m. tonight (June 10).

SQUARE DANCE—Dance Thursdays, 8-10 p.m.

STAMP CLUB—Meeting 7 p.m., June 11.

SWIMMING — GD family swim night 7-9 p.m., June 20, Mission Beach Plunge. Tickets at employe benefits outlets, 5 cents.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays, 10 a.m.-4 p.m.

TENNIS—Men's singles tourney starts June 13.

TOASTMASTERS—Convair Toastmasters meet Wednesdays, 4:30 p.m. Dynamic Toastmasters meet Thursdays, 5:30 p.m.

TRAILBIKE CLUB—Sierra de Juarez mountains weekend, June 13-14. Meeting 7:30 p.m., June 11.

TROPICAL FISH—Meeting 7:30 p.m. June 15.

Fishermen Slate Henshaw Weekend

Convair Fishing Club members will travel to Lake Henshaw June 26-28 for a weekend of fun, fishing, and relaxation.

Boats may be reserved through Earl McDaniel, 469-4669, by June 16.

R. H. Browning, club president, reported a successful Lake Morena outing May 16-17 where top April anglers N. D. Falkenberg, R. H. Feeley and Doris Flack were honored.

Sports Car Exhibit Scheduled June 21

The CRA Sports Car Club invites auto buffs to attend their first annual car show June 21, 10 a.m. to 5 p.m., in CRA Missile Park.

Contemporary sports cars, special interest and racing cars will be on display with owners and club members on hand to answer inquiries.

Trailbike Riders to 'Explore' Mountains of Baja California

About 25 members of the new CRA Trailbike Club will spend this weekend (June 13-14) in the Sierra de Juarez mountains of Baja California "exploring" the area near Pancho Villa's ruins on a variety of motorbikes.

Gene Langworthy of Electronics-SD, club president, said any interested General Dynamics employe or family group is invited to make the trip. "Anyone with any kind of bike—or with none at all—is welcome," he commented.

The trailbikers will drive to Tecate on State Hwy. 94 and cross the international border when the gate opens at 8 a.m. Saturday. They then will form a caravan for the 54-mile trip along Mexico Hwy. 2 and the road leading into the camp site 16 miles south of La Rumorosa. Camp will be set up in a primitive area where there are no sanitary facilities or water.

A 20-mile bike ride to Laguna Hanson is scheduled Sunday morning.

Plans for the trip will be completed at the club's monthly meeting at 7:30 p.m. tomorrow (June 11) in the CRA Clubhouse.

Schneider Fires 291 For Pistol Honors

Roland Schneider fired 291 to take master-class first place honors in CRA Pistol Club's .22-calibre police course competition May 24. Harry Black was second with 283.

Gerald Lehrer was first in expert class with a 287, followed by Charles Kropp with 283. James Thomas was sharpshooter class winner with 206.

Kropp won the center-fire short national match by firing 269. Ernie Kampmann was second with 259.

Cheney Top Sailor For May Regatta

Racing results of the CRA Sailing Club's May regatta in competition with the Torrey Pines Sailing Club showed Harold Cheney taking first with Chuck Fischer as runner-up in Fleet A. Bob Tugend took Fleet B honors.

Other CRA winners were Norm and Dickie Reed who placed second and Ward Waddell third in Fleet C. John Oostyen was runner-up in Fleet D.

OLYMPIC FILMS WILL BE SHOWN

Several movies will be shown members of the Adventurers Club at the June 17 meeting at CRA Clubhouse. One will deal with the Olympic Games in Mexico City.

Camera Club Sets Summer Schedule

CRA Camera Club has announced a summer schedule that calls for one meeting a month through Sept. 20.

Summer schedule will include meetings July 19, Aug. 15 and Sept. 20.

All meetings are held at 7:30 p.m., in the Photo Arts Bldg., Balboa Park.

Tennis Club Sets New-Type Tourney

CRA Tennis Club will initiate a new type of advanced men's singles tournament beginning Saturday (June 13). Intermediate players may participate.

Bob Herold, commissioner, said there will be a 16-draw and a round robin of four games—enabling each player to participate in a total of 60 games. Phone Cecil Norwood, ext. 2821 KM, or Herold, ext. 2360 KM, for additional details.

Lights are being installed for the courts adjacent to Missile Park and should be completed for night play by June 30.

DISTAFF DIVOTERS—General Dynamics women golfers, snapped at Whispering Palms course, from left are (back row) Jeanne Hawthorne, Nel Bartlett, Evie McFall, Nadine Prior, Marian Grenfell, Freda Margargal, Violet Nye, Mabel Humphries, and Flo Kell; (front) Ilene Wilson, Ann Plummer, Eileen Steffes, Jeannine Letzring, Agnes Sliger, May Dean Schell, and Joan Sjoblom. The club's annual Ernie Paul perpetual-trophy tournament is scheduled at 9 a.m., Saturday (June 13) on the Mission Bay course.

Both Electronics-SD and Convair Praised for Small Business Help

Convair and Electronics - SD have received U.S. Small Business Administration awards in recognition for their "contribution to the economic welfare of small business" through voluntary subcontract programs.

The award certificates were signed by Hilary Sandoval, Jr., SBA administrator, and were presented by Donald McLarnan, SBA Pacific Coast Region administrator, in ceremonies in Mayor Frank Curran's office.

Small businesses, under SBA definition, are generally those with less than 500 employes.

T. C. Courington, manager of contracts management, and T. R. Daugherty, purchasing agent and small business administrator, accepted the award for Electronics-SD.

Daugherty said Electronics-SD placed subcontracts with 1,255 small businesses and 251 large businesses last year.

"Eighty-three per cent of our total number of contracts and 67 per cent of all our outside procurement dollars went to small businesses," he said.

Convair division's award was accepted by H. E. Moose, director of material, and V. O. Olson, small business administrator.

Moose and John Quimby, district director for the SBA in San Diego, also presented a special award to Conic Corp. for having been selected as Convair's "Subcontractor of the Year" for 1969. Robert L. O'Dell, executive vice president, accepted for the firm, which produces S-band telemetry transmitters for Convair Atlas and Centaur space launch vehicles.

Olson said Convair placed subcontracts last year with 3,305 small and 1,657 large business firms.

"This means 67 per cent of the 4,962 firms that supplied materials and services for the division last year were small businesses," he said. "A total of 45,176 purchase orders were issued with a combined value of $22,031,732."

Olson said Convair for several years has awarded an average of about 50 per cent of its total subcontract dollars to small businesses.

Convair maintains a supplier data retrieval file containing information on capabilities of more than 6,000 supplier firms.

"This file is updated from questionnaires and checklists sent to the suppliers each year and provides all our personnel with a central source of supplier capability information," E. E. Hixson of the supplier evaluation and information center said.

"Use of this comprehensive capabilities file gives small and large businesses equal consideration when both meet the same impartial capability criteria."

Each supplier is assigned a four-digit grid code number and holes are drilled in a corresponding position in cards representing capabilities in which that supplier is qualified.

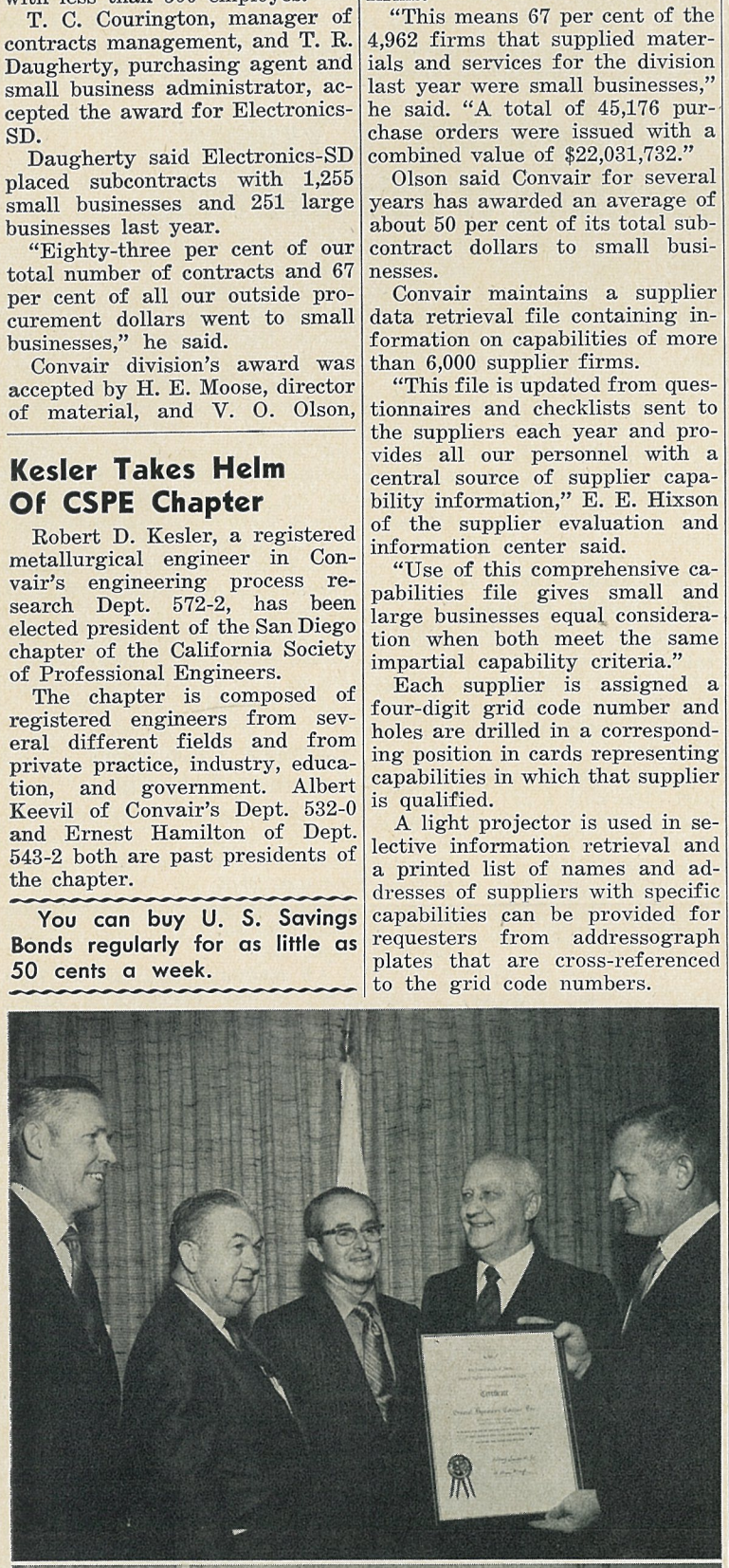
A light projector is used in selective information retrieval and a printed list of names and addresses of suppliers with specific capabilities can be provided for requesters from addressograph plates that are cross-referenced to the grid code numbers.

Kesler Takes Helm Of CSPE Chapter

Robert D. Kesler, a registered metallurgical engineer in Convair's engineering process research Dept. 572-2, has been elected president of the San Diego chapter of the California Society of Professional Engineers.

The chapter is composed of registered engineers from several different fields and from private practice, industry, education, and government. Albert Keevil of Convair's Dept. 532-0 and Ernest Hamilton of Dept. 543-2 both are past presidents of the chapter.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.



SUBCONTRACT HONORS—Small Business Administration award to Convair division (top photo) is displayed by H. E. Moose, right, director of material. Others, from left, are V. O. Olson, Convair small business administrator; Frank Curran, mayor of San Diego; John Quimby, SBA district director in San Diego; and Donald McLarnan, SBA Pacific Coast Region administrator who made presentation. Electronics-SD award (lower photo) is presented by McLarnan, center, to Tom Daugherty, left, purchasing agent and small business administrator, and Tom Courington, manager of contracts management.

"FLIGHT" RECOGNITION—N. S. Kourbelas, center left, receives certificate for attendance at AIAA "low-speed flight" educational lecture series from Lyman C. Josephs, Convair vice president and general manager. Others receiving certificates, from left, were Harry Mellinger, Bill Chana, Bob Holt, Martin Hollman, John Struthers, Sam Dickerson, W. E. Service, Frank Eder, R. L. Cox, Don Gross, Clyde Glasson, and Joe Hebert. Others, not present for picture, were M. I. Edelstein, D. W. Grisel, J. F. Ickler, and E. R. Emerson.

Math Wizards Earn Honors From Convair

La Jolla, Helix, and St. Augustine high schools' six-man math teams took home trophies for highest scores in city, county, and independent school divisions in the recent 13th annual Honors Math Contest sponsored by Convair division and San Diego State College. Members of the winning teams also received pen sets.

Cash awards of $100 each went to Everett Boyer of Point Loma High, Tom Thorvick of Helix High, and James Langland of St. Augustine High as highest individual scorers in the three divisions. (Boyer is the son of Vern Boyer of Convair's Dept. 516-0.)

Second place scorers in the competition received $50 awards and third placers $25 each.

The contest was designed by members of the mathematics department at San Diego State and was administered at the college May 16. Competing students were selected by their schools from senior honors math or equivalent classes.

Bruce T. Lundin, director of the NASA Lewis Research Center in Cleveland, was keynote speaker at a banquet at which the awards were presented May 21 in the Hotel del Coronado. He discussed some of the potential opportunities of the future for young people with a strong math background.

Lundin also visited Convair's Kearny Mesa plant May 21 for meetings with Jack L. Bowers, division president, and other division staff members and for briefings on the D-1 Centaur program by C. E. Wilson and the space shuttle study by Dr. Donald Dooley. Ronald Rovenger, NASA-Lewis resident representative at Kearny Mesa, assisted the division as host and escort.

J. H. Mason, Convair director of communication and master of ceremonies for the awards banquet, said the contest involves "an extremely tough test" and is sponsored by the division and the college as a means of recognizing student ability and to stimuate interest in the field of mathematics.

How tough is the test? Here's an example:

"An equation for the line through the point (1, −2) and perpendicular to $y = 3x + 1$ is (1) $x + 3y + 4 = 0$, (2) $y + 2 = 3(x - 1)$, (3) $3x + y = 1$, (4) $x + 3y + 8 = 0$, (5) $x + 3y + 5 = 0$.

Consultant Honored For Civil Leadership

VAdm. Emory Scott Land, USN (ret.), a General Dynamics consultant, has been awarded the Navy League's Robert M. Thompson Award for outstanding civilian leadership.

The admiral, 91 and still very active, was chairman of the Federal Maritime Commission during WWII and U.S. war shipping administrator.

'Low-Speed Flight' Lecture Series Deals With Rotocraft and VSTOLs

Seventeen Convair men attended a recent "low-speed flight" educational lecture series sponsored by the San Diego section of the American Institute of Aeronautics and Astronautics (AIAA) at the University of California at San Diego.

Each has been presented a certificate from the AIAA section by Lyman Josephs, Convair division vice president and general manager.

Lectures in the series included "Future rotocraft research in the U.S." by Dr. Paul F. Yaggy, director of the U.S. Army Aeronautical Research Laboratory at Moffett Field; "Super performance aerodynamics for VSTOL" by Peter Lissaman, California Institute of Technology professor; "Boundary layer mechanics of rotating airfoils" by Dr. James McCroskey of the Army Aeronautical Research Laboratory; "Propulsion for VSTOL aircraft" by Dr. Allen E. Fuhs, chief scientist at the Aero Propulsion Laboratory at Wright-Patterson AFB; "Guidance and control of VSTOL aircraft" by Dr. Julian Wolkovitch of Mechanics Research Inc., El Segundo; and "Mass-point dynamics for helicopters" by Arthur E. Bryson, a Stanford University professor.

As an outgrowth of the series, the AIAA section presented a "VSTOL movie night" May 6 at Convair's Kearny Mesa plant. Films were shown on the Canadair two-engine tilt-wing CL-84, the jet-lift DO-31, the tilt-ducted-fan X-22, the fan-in-wing XV-5A, the four-engine tilt-wing XC-142A, and the deflected-jet Harrier.

MATH HONORS—Receiving $100 cash awards from Jack Bowers, Convair division president, as top scoring students in their divisions in Honors Math Contest are, from left, James Langland of St. Augustine High, Tom Thorvick of Helix High, and Everett Boyer of Point Loma High. More than 250 of the county's top high school math students competed.

Dynamics Men Will Take Part In AIAA National Conferences

The American Institute of Aeronautics and Astronautics has scheduled two national conferences, the Fifth Thermophysics Conference and the Third Fluid and Plasma Dynamics Conference, to be held concurrently June 29 through July 1 at International Hotel in Los Angeles.

Dr. Donald Dooley, Convair division vice president-space programs, will chair a session on "Aerodynamics related to space transportation systems" at the Fluid and Plasma Dynamics Conference.

Among other areas of discussion will be production of controlled thermonuclear reactions through plasma heating and confinement methods and use of lasers for plasma production.

R. O. Doughty and R. L. Jones of Fort Worth division will present a paper on "Thermal testing of inflatable solar shields for cryogenic space vehicles" and John Romanko, J. K. Miles, and P. R. Cheever, also from Fort Worth, will cover "Cathodoluminescence in thermal control coatings" in the Thermophysics Conference.

When telephoning, never mind the weather. Get to the point. Telephone time costs money.

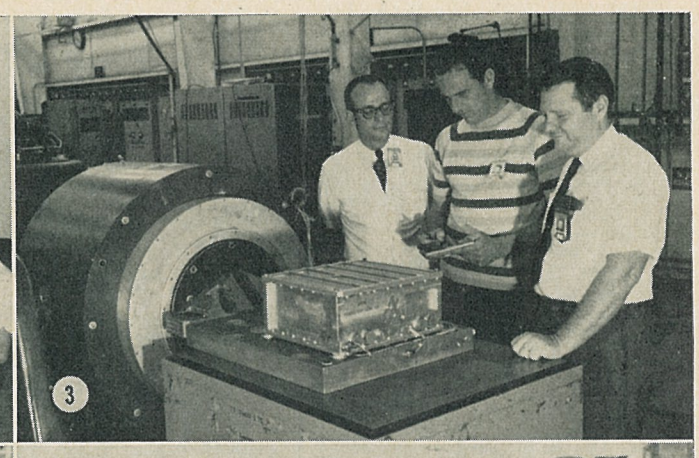
Salvage Schedule

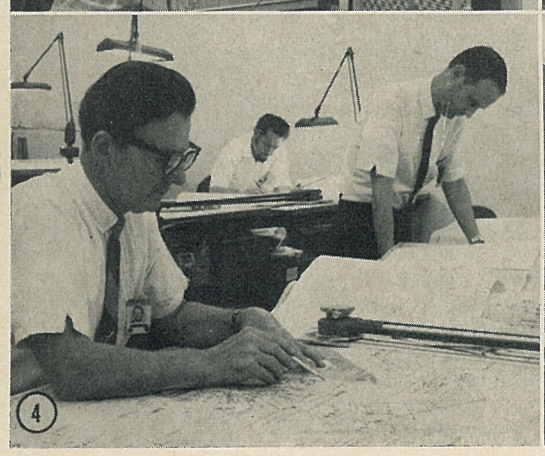
Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, June 27. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. No canvas or open-toed shoes and no bare feet.

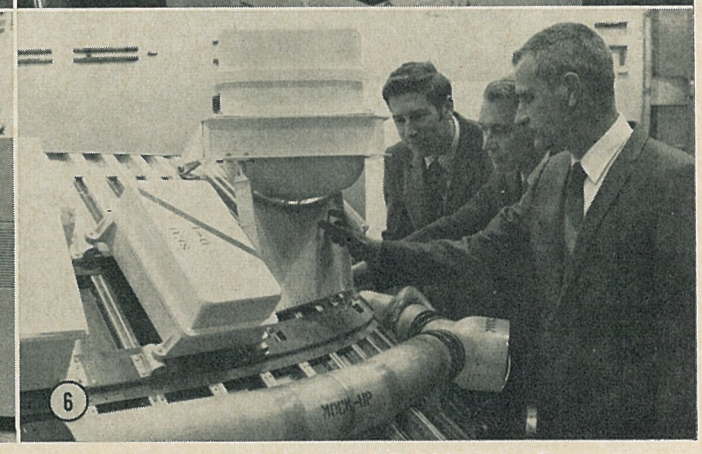
SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 23, No. 12 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, June 24, 1970







IMPROVING CENTAUR—Photos illustrate variety of work being accomplished for Improved Centaur D-1 launch vehicle at Convair division's Kearny Mesa plant. (1) Bill Marchant, senior electronics assembler, checks circuit on signal conditioner test unit. Looking on is Charles Davis, senior electronics engineer. (2) Representatives at status review are (standing from left) chairman Frank Berry, Jeanne Williams, Bill Posey, Bob Clark, Seymour Zeenkov, and (seated clockwise) Jim Fithian, Bill Shiba, E. E. Barringer, Bill Knowles, Dan Paukovec, Roy Muelchi, William Beers, Bob Rustad, Ked Odom, Phil Nolan, John Santos, Jerry Letzring, Caesar Banks. (3) Checking signal conditioner unit prior to start of vibration test, are Jim DePriest, senior design engineer; Dennis Williams, senior flight test engineer; Tom Stalcup, senior test engineer. (4) Richard Summers, senior engineer, puts finishing touches on space-control reference drawing for D-1T vehicle. In background are Ron Will, design draftsman, Dick Jones, project group engineer. (5) Computer system eventually will provide capability for ground checkout. Jim Devore, foreground, operates teletypewriter as Don Sudweeks and Bill Weston check tape drives and lead engineer Don Terry, right, looks over test printout. (6) Discussing equipment mockup are, from left, Burton Sherwood, principal engineer for mockup; Ray Stoker, lead engineer for modular structures; Russ Thomas, assistant program manager for D-1 mechanical systems. Engineering and testing of D-1 Improved Centaur components are continuing at fast pace.

Convair Operations Reorganized Along Division-Wide Line

Convair division's operations functions have been reorganized on a division-wide rather than plant-site basis. Department numbers for most functions remain unchanged.

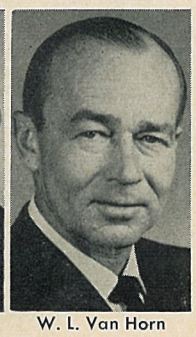
W. L. Van Horn has been named director of operations program management and control (Dept. 200-0) and J. M. Adamson has been appointed director of manufacturing (Dept. 700-0). Both report to L. C. Josephs, Convair vice president and general manager.

Reporting to Van Horn are W. R. Bruce, manager of program plans and control (Dept. 203-0); F. D. Robbins, manager of production control (Dept. 220-0); W. E. Wise, manager of industrial engineering (Dept. 202-0); W. J. Stanley, manager of plant engineering (Dept. 250-0); and G. M. Barker, flight captain of airlift flight operations (Dept. 201-0).

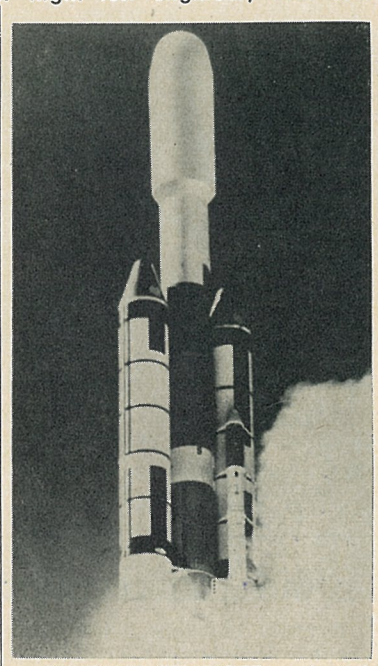
Program managers also reporting to Van Horn are J. B. Hurt, DC-10 (Dept. 210-0); R. W. Miller, C-5 (Dept. 055-0); J. S. Berggren, F-111 support elements (Dept. 053-0); W. S. Stroud, F-111 aircraft elements (Dept. 053-0); J. M. Farrar, Centaur operations (Dept. 214-0); and J. R. Thayer, resident manager at Fort Worth division (Dept. 053-0); D. L. Fagan, in addition to his primary assignment as director of manu-

(Continued on Page 4)

J. M. Adamson



W. L. Van Horn



CENTAUR SENDOFF — Artist's concept depicts Improved Centaur D-1T upper-stage vehicle, enclosed in large two-piece shroud that extends to interstage adapter, being lifted into space atop Titan-3D with extra strap-on solid-fuel rocket motors.

DC-10 Roll-Out Slated July 23

The world's first wide-bodied tri-jetliner with its Convair division-built "fuselage of the future," the McDonnell Douglas DC-10, will be formally introduced at a "coming out party" July 23 in Long Beach.

Being invited are more than 1,000 airline and business executives; key representatives of federal, state, and local governments; members of the armed services; and news media representatives.

The roll-out will take place on the schedule established 26 months ago when McDonnell Douglas made its decision to un-

(Continued on Page 2)

Improved Centaur Slated For Use With Atlas, Titan

Engineering, production, and testing of prototype electronics and related hardware for the new D-1 Improved Centaur are continuing at a rapid pace at Convair division's Kearny Mesa plant.

Improved Centaur is being developed by Convair and the NASA Lewis Research Center for use with Atlas and Titan boosters for a wide range of future earth-orbit and interplanetary payload missions.

C. E. Wilson, program manager for Improved Centaur, said first of the D-1A vehicles is scheduled for delivery in 1972 for use with Atlas in 1973 to send Pioneer G on a 500-million-mile, two-year trip for Jupiter flyby.

A sister craft, Pioneer F, is scheduled for launch in 1972 by an Atlas-Centaur D. The Pioneers will mark man's first venture past Mars and first spacecraft entry into the asteroid belt between Mars and Jupiter. The 550-pound spacecraft will help collect information on deep-space hazards and should enable scientists to determine if the sun's greatest planet is really a minor star.

First of the Improved Centaur D-1T vehicles for Titan launch is scheduled for delivery in 1973 for use in a "proof flight" early in 1974. This will demonstrate compatibility of the two vehicles in preparation for the 1975 Viking Mars-lander launches.

The Titan 3-D is a two stage hypergolic liquid fueled vehicle with two additional strap-on solid-fuel rocket motors for increased launch capability.

In the Titan-Centaur configuration, the Centaur D-1T high-energy upper-stage vehicle and payload will be enclosed in a two-piece shroud now being developed for NASA by Lockheed. The shroud will provide additional structural strength for the Centaur during booster flight. It will be jettisoned after booster cut-off.

The Centaur D-1T also will be enclosed in an aluminized mylar radiation shield to reduce heat transfer to the liquid hydrogen tank — an important advantage for lengthy in-space coasts and three-engine-burn Centaur missions.

The Titan-Centaur D-1T may be selected for launch of Helios sun probes in 1974 and 1975; two Viking Mars-landers in 1975; a "grand tour" test vehicle in 1975; and a 1977 "grand tour" spacecraft that will use gravitational pull from planets for a giant swing around the universe.

Potentital future missions for the Atlas-Centaur D-1A include launches of various scientific satellites, follow-on INTELSAT synchronous-orbit communications satellites, domestic satellites for U.S. telephone companies, and a Mercury-Venus flyby spacecraft.

Convair currently has about 350 employes working on Improved Centaur, a majority of them engineers, under contracts with a combined value of about $22 million. Proposals are under way for follow-on activity.

Key members of Wilson's staff and their areas of responsibility include Bill Vega, systems integration; Jim Fithian, electronics; Russ Thomas, mechanical systems; Jay Farrar, factory; Dale Nash, reliability and quality assurance; Seymour Zeenkov, contract performance; and Frank Brown, material.

Improved Centaur will have the same basic configuration, same engines, and same fuel load as Centaur D but will launch a heavier payload and will have much more sophisticated electronic and guidance systems.

The guidance and flight control system will utilize a new on-board computer with increased speed and capacity and with related "software" for autopilot, attitude control, and sequencing functions. Autopilot, telemetry, and guidance electronics no longer will be required on Atlas.

The new computer also will permit increased use of "software" (advance computer programming) for mission-peculiar requirements and in-flight changes. Roll attitude of the vehicle during space coasts also will be controlled for precise thermal-effect maneuvering and antenna pointing.

Computer controlled launch sets (CCLS) in Bldg. 4 at KM and at Complex 36 at ETR will be used for automatic ground checkout of most of the Improved Cen-

(Continued on Page 2)

Atlas-Centaur D Has Work To Do

Convair division's older (designwise) and reliable Atlas-Centaur D two-stage launch vehicle still has a lot of important work to perform before it is replaced by updated and more versatile Atlas-Centaur D-1 vehicles.

Missions scheduled, listed by order in which contracted, and tentative launch timing, all subject to change, include:

Vehicle:	Mission:	Launch:
AC-21	OAO-B	October, 1970
AC-22	OAO-C	August, 1971
AC-23	Mariner-Mars	May, 1971
AC-24	Mariner-Mars	May, 1971
AC-25	INTELSAT	January, 1971
AC-26	INTELSAT	July, 1971
AC-27	Pioneer F-Jupiter	February, 1972
AC-28	INTELSAT	December, 1971
AC-29	INTELSAT	May, 1972

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between June 16 and 30.

Thirty-year: Dept. 027, L. Hale; 031, G. A. Hasti, J. P. Oakley, O. L. Johannsen; 046, R. R. Atkinson, E. V. Minch; 049, K. R. Abbott; 106, C. S. Brandt; 202, G. M. Coole; 401, A. L. Bishop Jr.; 698, R. F. Nelson.

Twenty-five year: Dept. 015; L. B. Blackeer; 027, O. G. Offill; 101, Mary Pearce.

Twenty-year: Dept. 101, C. E. Pennick; 143, S. Messer Jr., Mary M. Redbird; 144, A. Landry, D. R. Wilson; 203, L. C. Simek; 250, R. J. Hay, J. E. Pugh; 401, J. J. Manning; 524, Violet T. Woods; 545, E. R. Gauthier; 551, W. R. Kinney; 565, Helen D. Carlton; 583, Walt D. Reeder; 585, R. E. Martin; 732, R. G. Adams; 831, W. M. Alberty Jr.; 833, A. R. Davis; 840, A. V. Skiles, D. E. Sundstrom; 860, D. L. Lewis; 950, R. W. Keehn; 953, F. Applegate; 962, R. S. Stevens; 988, E. R. Chapman, G. R. Dunn.

Fifteen-year: Dept. 130, J. V. Johnston, J. O'Toole; 131, H. M. Graham; 141, G. E. Stachwick; 193, G. W. Megeath; 203, Mildred D. McLeod; 541, M. M. Chazotte Jr.; 543, W. R. Harger, E. A. Hamilton; 585, A. H. Ryan; 587, F. C. Harris; 780, Jean E. Whitfield; 832, Aetha M. Johnson; 950, A. E. Berndes Jr., W. J. Giesenschlag; 979, R. Andre; 986, D. H. Flowers.

Ten-year: Dept. 046, Wauineta I. Leach, A. Silva; 101, Mary J. Gary, Nancy A. Prettyman; 110, Dora D. McGregor; 131, H. C. Sandell; 149, Maryevelyne Carson, H. R. Van Hoose; 170, Melva J. Guengerich; 515, F. J. Berberich Jr.; 524, Rosalba G. Triplett; 543, R. O. Nissen; 553, M. S. Fonseca; 589, M. J. Aleshire; 732, V. B. Sult; 733, G. T. Angoco; V. B. Jackson; 954, Donna J. Townend; 966, J. Dyer; 985, C. A. Klein; 986, L. Lucero.

ELECTRONICS

Twenty-year: Dept. 105, M. B. Beck.
Fifteen-year: Dept. 618, G. T. Curtis.

Awards

CONVAIR

Employe Suggestion awards approved for week ending 5 June:

A. A. Astala, Dept. 149-7, $18; T. E. Barker, 810, $195.40; N. Chaudion, 733, $10; C. J. Collins, 250-1, $15; R. L. Cowan, 002, $15; H. A. Crane, 015, $71.40; H. E. Eldridge, 031, $15; W. E. Fowler, 130-1, $30 (two awards); M. E. Gallagher, 149, $39.20; W. J. Gibson, 401-4, $15; M. M. Henry, 143-4, $10; R. L. Hume, 780-1, $15; J. L. Killeaney, 027, $15; R. J. Kolek, 144-1, $10; F. A. Lucio, 149-7, $92.80; R. C. Miller, 149-8, $15; W. W. Nobiensky, 001, $9.35; R. E. Olson, 015-2, $95.90; H. E. O'Neil, 250-1, $54.70; F. Piersall Jr., 144-1, $10; M. H. Thrasher, 001, $9.35; H. R. Van Hoose, 149-6, $15; L. M. Walling, 149, $15; G. W. Willis, 131-1, $15.

Following are Employe Suggestion awards approved for the week ending June 12:

W. L. Baker, Dept. 250-1, $15; J. Baptista, 015, $24.20; W. S. Betts Jr., 584, $15; W. T. Black, 985-4, $15; A. E. Brady, 507-0, $15; J. A. Brown, 518, $114.20; M. H. Carter, 130-3, $16.70; J. Cantone, 141-4, $7.50; W. C. Cropp Jr., 027, $15; N. Downs, 196, $15; J. L. Eiland, 149, $21.80; G. E. Ewald, 831, $35; R. E. Gunnerson, 196, $354; K. Hazelwood, 562, $15; C. J. Lewis, 250-1, $30 (two awards); E. M. Lizarraras, 254-2, $15; W. H. Lowe, 507-0, $30.40; W. Mann, 001, $15; E. V. Marikle Jr., 507, $69.30; O. F. Martin, 985-3, $20.80; F. Meja, 141-4, $7.50; C. D. Miller, 146-3, $157.20; V. Moe, 144-4, $15; J. R. Nelson Jr., 170-8, $15; R. L. Nelson, 962-3, $15; A. F. O'Brien, 565-1, $100; H. E. O'Neil, 250-1, $45 (three awards); J. L. Owens, 046, $59.50; A. I. Saito, 453, $15; R. W. Sanger, 507, $15; C. Seagraves, 001, $25; T. J. Skelley, 979-1, $15; R. L. Stevens, 045, $15; W. B. Swearingen, 953-1, $15; E. W. Sweeney, 565-1, $108; D. E. Tibbs, 756, $15; M. C. Tracy, 027, $29.60; J. J. Valenti, 407, $34.20; J. L. Vidovich, 407, $15; W. G. Walker, 545-3, $15; D. R. Wilson, 019, $15; C. A. Young, 578-3, $15; S. W. Zeiss, 780-4, $15; R. J. Zenger Jr., 518, $15.

Personals

CONVAIR

Acknowledging with grateful appreciation your very kind and thoughtful expression of sympathy. The planter you sent is beautiful and will remain in our home to enjoy from year to year.

The Harold Newell Family

* * *

I wish to express my thanks and gratitude to all the kind people at Convair for your kind expressions of sympathy on the death of my daughter, Frances C. Stoltz, Dept. 130-1.

Florence E. Stoltz

Lost & Found

CONVAIR

LOST—Brown six finger deep pocket baseball glove at Kearny Mesa Clubhouse on June 2. Please call Jim Abernethy, ext. 2051 LF.

Deaths

CONVAIR

NEGRETTE—John D., retired May 31, 1962, Dept. 25-6, died May 28. Survived by his wife, Marion.

NEWELL—Harold F., retired March 5, 1962, Dept. 401-7, died May 31. Survived by his wife, Dolores.

WISE—Imogene, Dept. 046, died June 3. Survivors include a daughter, Sharon Dedmon and son, John.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P. O. Box 1950, San Diego 92112.

Retirements

CONVAIR

BLAND—Judson T., Dept. 250-2. Seniority date Aug. 17, 1955, retired May 28.

CHRISTELEIT—Julius F., Dept. 059-5. Seniority date Oct. 23, 1958, retired May 28.

CLINTON—Wilbert C., Dept. 802-0. Seniority date March 14, 1962, retired May 28.

COCHRAN — Murl L., Dept. 015-0. Seniority date Oct. 2, 1950, retired May 28.

COSTA—Fred L., Dept. 578-1. Seniority date March 4, 1943, retired May 7.

DE PLOMB—Edward L., Dept. 964-2. Seniority date July 13, 1964, retired May 8.

DUNCAN — Nelson L., Dept. 407-0. Seniority date Feb. 17, 1969, retired May 20.

EDDINGTON — William W., Dept. 057-0. Seniority date Sept. 22, 1953, retired May 8.

FORT—Cephas O., Dept. 566-1. Seniority dated Jan. 1, 1958, retired May 28.

FRANKLIN—Furman B., Dept. 780-1. Seniority date Dec. 18, 1946, retired May 28.

GILBERT — Martin D., Dept. 985-1. Seniority date Oct. 27, 1958, retired April 15.

GREEN—Eugene D., Dept. 491-0. Seniority date March 2, 1959, retired May 28.

HAGAN—Mildred L., Dept. 979-1. Seniority 9, 1957, retired May 28.

HARTZLER—S. Eugene, Dept. 195-9. Seniority date Aug. 30, 1950, retired May 8.

HERRMAN—Karl, Dept. 401-8, Seniority date Sept. 21, 1937, retired May 28.

HUNT—William C., Dept. 835-3. Seniority date Oct. 28, 1947, retired May 28.

JAEGER—Florence C., Dept. 195-7. Seniority date Oct. 12, 1959, retired May 18.

LAUDENSLAGER — Anne K., Dept. 999. Seniority date Jan. 19, 1956, retired May 22.

LEARNED—Lucile G., Dept. 170-9. Seniority date Feb. 26, 1952, retired May 8.

MYERS—William T., Dept. 531-2. Seniority date Dec. 5, 1940, retired April 30.

NIEHOFF—Catherine A., Dept. 518-0. Seniority date Nov. 30, 1953, retired May 28.

PARRISH — Milton H., Dept. 148-4. Seniority date Nov. 12, 1946, retired May 28.

POTEET—Margaret M., Dept. 149-1. Seniority date April 14, 1952, retired May 28.

PUTERBAUGH — Elmer C., Dept. 031-0. Seniority date Aug. 2, 1939, retired April 30.

SCHART — William J., Dept. 570-0. Seniority date April 2, 1947, retired April 30.

STAPLEFORD—Ada B., Dept. 860-0. Seniority date June 5, 1959, retired May 28.

STOKES—Leland E., Dept. 460-0. Seniority date Jan. 22, 1965, retired May 28.

SUNDER—Joseph W., Dept. 250-5. Seniority date March 16, 1951, retired May 22.

VANCE—Grafton A., Dept. 731-0. Seniority date Oct. 11, 1946, retired May 28.

VANDER VEER—Marjorie R., Dept. 016-0. Seniority date Oct. 22, 1947, retired May 28.

Births

CONVAIR

WOODREY — Son, Michael James, 8 lbs., 8 oz. Born June 13 to Evaline and Wes Woodrey, Dept. 583.

DC-10 Roll-Out Slated July 23 At Long Beach

(Continued from Page 1)

dertake the multi - billion - dollar program. Convair was awarded the contract for production of the fuselage in August, 1968.

First flight of the DC-10 is scheduled this fall with certification for airline service expected late next year.

Forty-seven Convair division employes and wives were at the Douglas plant July 13 for a special "sneak preview" for DC-10 suppliers.

Among those making the trip in the Convair 440 for the program presentation and plane preview were J. M. Adamson, director of manufacturing; R. G. Daly, manager of assembly; C. F. Blair, manager of fabrication; E. H. Damarus, manager of production engineering; and several assembly department foremen.

"It was extremely impressive," Daly commented later. "It's hard to visualize its size even when you see the sections at Convair that will make up the completed fuselage."

External assembly of the first plane had been completed, although the engines had been removed for minor modification at the time of the preview.

Daly said he was "very pleased" not only with the aircraft and its fuselage but with the comprehensive marketing plan developed by McDonnell Douglas.

As of early this month, 11 airlines had placed orders and options for 204 of the swift and spacious DC-10s, which can carry up to 345 passengers and are designed for ranges from 300 to 6,100 statute miles.

Improved Centaur Slated For Use With Atlas, Titan

(Continued from Page 1)

taur systems.

Both will use Xerox Data Systems 930 computers and related hardware, Convair-designed and fabricated interface equipment, and Control Data Corp. display stations. Decommutator units for use with the system were produced by Dynatronics operation of General Dynamics in Orlando, Fla.

Don Terry, CCLS lead engineer, said after the system is operational one man will be able to conduct the entire systems checkout from a display station. The CCLS at KM will be connected to launch vehicles in Bldg. 5 by cables. The one at ETR, now being used for Centaur D checkout, will be connected to Convair-produced interface electronics racks for Improved Centaur checkout.

An equipment module mockup in Bldg. 5 at KM is being outfitted with simulated full-scale Improved Centaur electronics packages and will continue to "grow" as new additions are made during the next year.

"The three-dimensional structure gives us easy visualization of component placement and will be a good production tool for use in future harness fabrication," Thomas said. "A segment of the advanced shroud eventually will be placed over the mockup for evaluation of its fit and of accessibility to different electronic modules through openings."

Prototype sequence control, servo inverter, and instrumentation and telemetry signal conditioning units for use on Improved Centaur were completed this month in the Convair electronics factory and have been undergoing stringent environmental tests.

Tom Stalcup, senior test engineer, said both random and sine wave vibration, the latter to simulate booster engine noise, were being generated as the units were subjected to 16½-g loads on a "shaker table."

In the electronics factory, a control center for Improved Centaur has been established with representatives from production control, manufacturing, quality control, material, planning, engineering, and other functions working together in a "development shop type" of operation.

Frank Berry, control center chairman, calls status review meetings for representatives from all concerned functions as needed to secure information, resolve problems, or discuss and assign "action item" tasks.

Bill Marchant, a Dept. 780-2 senior electronics assembler, recently was commended for "outstanding personal craftsmanship" in wiring a PCM signal conditioning test equipment rack that required connecting more than 4,000 wires from connectors to a patchboard.

Wilson said the prototype integrated electronics system for Improved Centaur should be completed for checkout by September.

Josephs on Board Of San Diego UCS

Lyman C. Josephs, Convair division vice president and general manager, has been elected to the Board of Directors of the United Community Services (UCS) of San Diego County.

The board oversees the annual United Crusade campaign and distributes grants to health and social service agencies in the San Diego area.

KM Receptionist Dies After Illness

Fran Stoltz, who had greeted thousands of visitors at Convair's Kearny Mesa plant during 10 years as visitor control and security receptionist, died June 8 after a lengthy illness. She was 33.

Miss Stoltz is survived by her mother and a brother. Funeral services and interment were at Greenwood Memorial Park.

Complex 36 launch pads at ETR are to be modified for the Atlas-Centaur D-1A in 1972. Complex 41, a Titan launch facility, will be modified to accommodate Titan-3D and Centaur D-1T.

Research and Development Work Highlighted in Review for 1969

The fourth edition of the Convair Research Summary, highlighting division-funded research and development work accomplished during 1969 by 102 different investigators, is being distributed to selected governmental and other customer and potential-customer organizations.

John Sterrett of Dept. 515-0, editor for each of the four annual editions, said the 1969 summary includes presentations on the most significant developments during the year in IRAD studies in aerodynamics, guidance analysis, dynamics, sensor technology, information sciences, electronics, thermodynamics, life sciences, materials, structures, manufacturing development, and systems analysis.

Included are papers on subjects ranging from metal matrix composites to laser measurement methods to interior arrangement of a space shuttle vehicle.

The current summary was produced under the direction of John Wild, director of engineering technologies, and D. J. Hallman, supervisor of technical reports.

Bill Connacher of Dept. 515-0 provided technical illustrations and page layout for the publication and Roy Gjertson of Dept. 517-0 provided the cover artwork. Frank Chaddock of Dept. 526-6 is handling distribution.

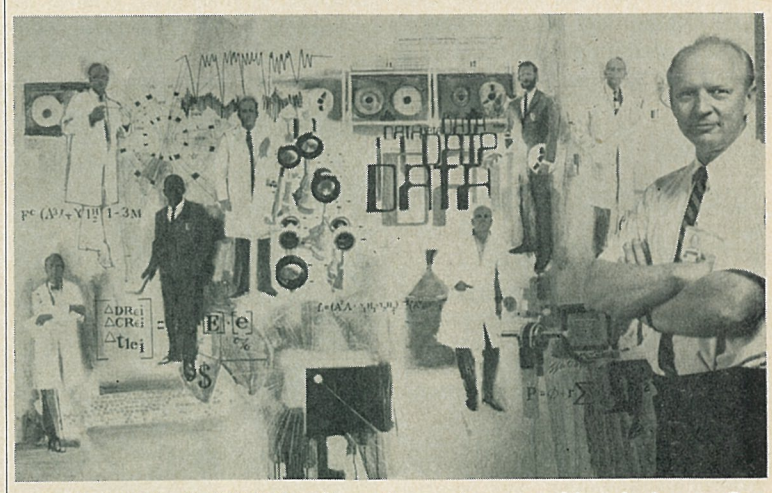
Hallman said the CRS includes information on only non-classified studies and those funded independently by the division last year.

"It shows the wide range of IRAD work being accomplished," he said. "Many of our engineers will want to take a copy with them on sales trips to use in acquainting potential customers with the scope of our research and development activity."

Photos and many line and cutaway drawings by Connacher are used to illustrate the research work being described in each paper. Photos and brief biographical sketches are included for each investigator.

Sterrett said department heads nominate papers for inclusion in each year's CRS. Engineering staff personnel make final selections and investigators are asked to submit 1,000-word papers. "In editing, we strive for clear copy that delivers a succinct message," he said.

Karel J. "Charlie" Bossart, widely known as Convair's "father of the Atlas" and now a consultant for the division, initiated publication of the annual research summary while he was technical director and director of IRAD studies for the division. A total of 1,200 copies of the current issue has been printed for distribution.



RESEARCH IMAGERY—Convair senior graphic designer Roy Gjertson stands with colorful cover he created for fourth edition of Convair Research Summary.

For Paintings

Door Panels Ideal Surface

Roy J. Gjertson, a senior graphic designer in Convair's art and editorial Dept. 517-0, is developing something of a reputation among his Convair colleagues as a "door painter."

He's recently produced five large paintings of the proposed Convair space shuttle booster and a cover illustration for the Convair Research Summary on beech, birch, and masonite hollow door panels purchased from a local discount department store.

"This surface is ideal for this type of illustrating," he commented. "It's nothing unique. Artists have been painting on door panels for years. I cover the panel with Gesso primer that looks a lot like white house paint, then use acrylic colors."

Burt Brockett, supervisor of the art and editorial section at Kearny Mesa, said one of the major reasons the space shuttle booster paintings were done on door panels was in keeping with the massive size of the vehicle being depicted.

"Size of the illustrations emphasizes the magnitude of the product," he said.

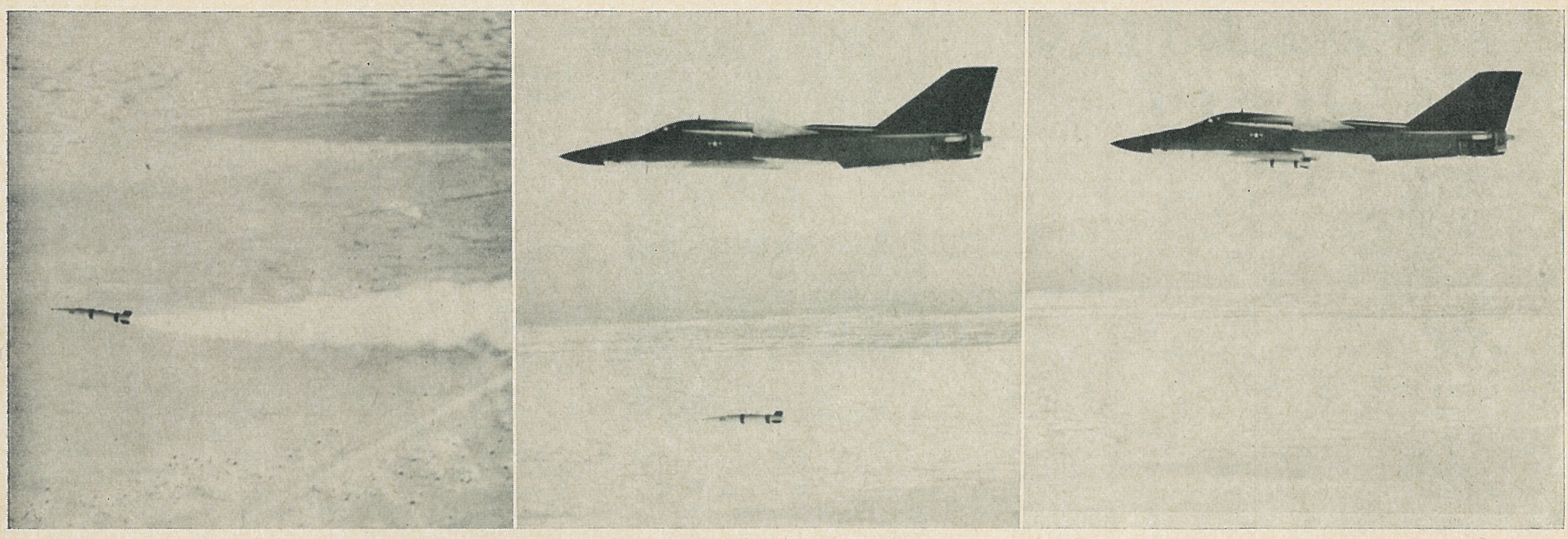
In addition to their primary role as illustrations for a variety of photographic reproduction needs, the paintings will be exhibited at technical seminars and exhibitions, art shows, and at Convair in-plant locations.

Gjertson's most widely seen work at Convair includes 12 paintings used in illustrating the 1970 supervisors' calendar. The 12 since have been consolidated and printed as posters depicting "35 years of Convair craftsmanship."

But philatelists around the world know Gjertson as designer of the 5¢ Gettysburg Commemorative U.S. postage stamp which depicted two Civil War soldiers locked in hand-to-hand combat.

Gjertson's painting was selected in a nationwide competition. Millions of the stamps were issued in the U.S. and abroad in 1963.

Before joining Convair a year ago, Gjertson was a free-lance artist in Los Angeles and had overseas assignments in Iran and Japan to paint calendar art. He is a graduate of the art school at the Art Center of the College of Design in Los Angeles. He also previously worked as an illustrator for McDonnell Douglas, North American, and Space Technology Laboratories.



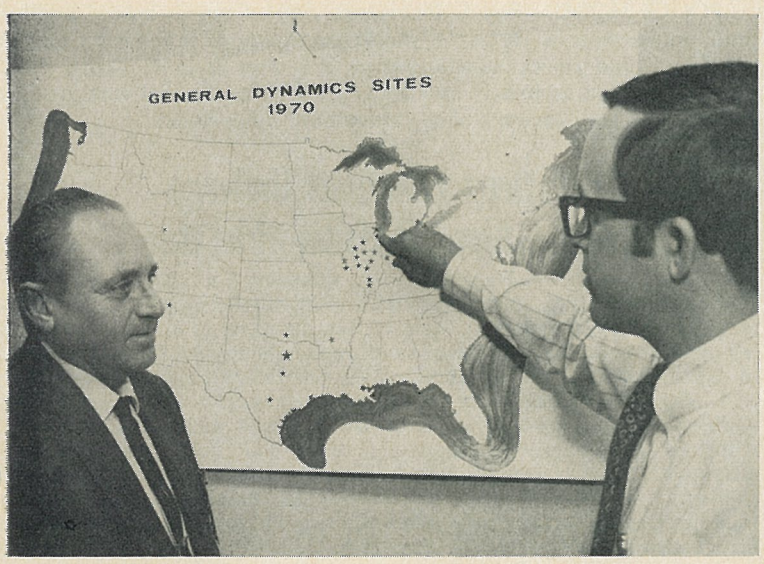
SUCCESSFUL LAUNCH—An Air Force Short-Range Attack Missile (SRAM) was launched for first time from an FB-111 strategic bomber recently over White Sands Missile Range, N.M. These photos show SRAM just emerging from weapons bay of FB-111, falling away from bomber and streaking along after engine ignited. SRAM is under development by Boeing Co. and is planned for use by Strategic Air Command on FB-111s and late model B-52s.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parenthesis are dates when individuals joined the company.)

HOWARD E. WALL (1956) from Quincy Shipbuilding division to Corporate Headquarters as director of Corporate accounting; **GEORGE J. CHOPP** (1966) from Stromberg-Carlson to Corporate Headquarters as assistant director of labor relations; **CLIFFORD E. PUCKETT** (1960) from Corporate Headquarters to director of industrial relations, Stromberg-Carlson; **JAMES R. MUELLEN** from Electronics, Rochester to compensation representative, Quincy; **PETER McKINLEY BUCKINGHAM** from Electronics, Rochester to service representative, Stromberg DatagraphiX; **GEORGE HALLAD** from Quincy to Electronics (Electro Dynamic) as production control manager; **D. S. LYON** (1956) from Quincy to Stromberg-Carlson as staff assistant; **JAMES W. CROOKS Jr.** (1944) from Electronics-SD to engineering staff specialist, Convair; **RUTH A. HAYWARD** (1955) from Convair to Electronics-SD as senior engineer; **C. F. SANSCHAGRIN** (1967) from Electronics, Rochester to methods and standards analyst, Stromberg-Carlson; **D. B. MILES** (1962) from Electronics, Rochester to Stromberg-Carlson as systems and procedures analyst; **DONALD E. HALFORD** (1957) from Convair to Material Service Corp.; **EDWIN H. ADKISSON** (1956) from Convair to Pomona (Sycamore facility); **M. G. BARKER** (1968) from Electronics, Rochester to Stromberg-Carlson as cost analyst; **R. G. DALY** (1956) from Quincy to Convair as manager of assembly.



OFF TO ILLINOIS—J. H. Morris, a chemist on Bioenvironmental Health Center's off-site team, points out area of next survey to Dr. J. K. Leverett, Fort Worth division medical director.

Inspection Teams Slate Midwest Trips to Insure Against Pollution

Having successfully completed a pollution survey of Corporation facilities in the northeast, Bioenvironmental Health Center specialists from Fort Worth were to start a survey of midwest facilities this week.

"This time, we'll survey a large number of the Resources Group's 70 facilities in Illinois," said Frank Paschal, bioenvironmental administrator. "This will include lime plants, coal mines, and sand and gravel facilities."

Members of the Center's offsite survey team make all surveys —usually in teams of two. They are: J. S. McKarns, industrial hygienist; J. D. Eastes, senior heath physicist; J. H. Morris, chemist; and Dr. E. E. Mach, research chemist.

"In these initial surveys, we're checking to see that plant interiors have the proper noise and lighting levels, and that the air is relatively pure," Paschal said. "We're also checking the air and water on plant perimeters to make sure the organization is meeting local health standards for pollution."

Paschal said that follow-on surveys would be carried out some time next year. "Pollution laws are becoming stricter, and we want to make sure GD is complying," he said.

The survey of midwest facilities will take them from four to six weeks, Paschal estimated.

This summer, the specialists will survey west coast facilities, including Convair, Stromberg DatagraphiX, Pomona, Electronics-SD, and the Navajo facility in Arizona.

The final inspection—probably this fall—will include Fort Worth facilities (including Waco and San Antonio), and Stromberg-Carlson's plant at Ardmore.

Paschal said the Center's library is being expanded and now includes: air and water sampling guides; state health regulations; manuals on how to analyze air and water; environmental health newsletters; trade journals; and other literature.

"We're continuing to get a number of queries about pollution and health problems from other divisions and organizations," Paschal said, "and fortunately we're able to offer some help by mail."

The Center also has a "fairly extensive" file of information on vendors who supply health-control equipment.

Corporate guidance for the Center is under Algie A. Hendrix, vice president. Dr. John P. McCann, Corporate director of health, safety, fire and security, is focal point for coordination; and Dr. J. K. Leverett, Fort Worth's medical director is in charge of operations at the Center.

Barry Goldwater Predicts F-111 To Be SAC Backbone For Decade

Senator Barry Goldwater thinks the F-111 is going to become the backbone of Strategic Air Command for at least another 10 years.

"I think they've made a big mistake in cutting back the program, both the F-111 and the B-111," Senator Goldwater said during a recent visit to Fort Worth division. "We are buying fewer airplanes this year than we bought in 1935 . . .

(The senator said he was trying to drop the F and just call the 111 the B, because "it's an attack airplane and a strategic bomber.")

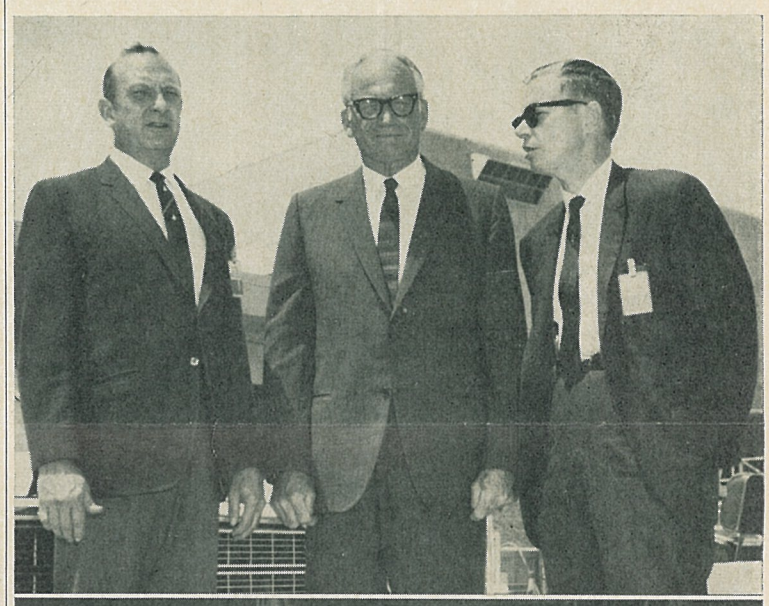
"It's a bad direction we are taking," he said, "with the Russians not cutting their long-range fleet, adding to their medium-range fleet and stepping up the supersonic aircraft capable of, not the same missions as the F-111, but certainly of tactical missions."

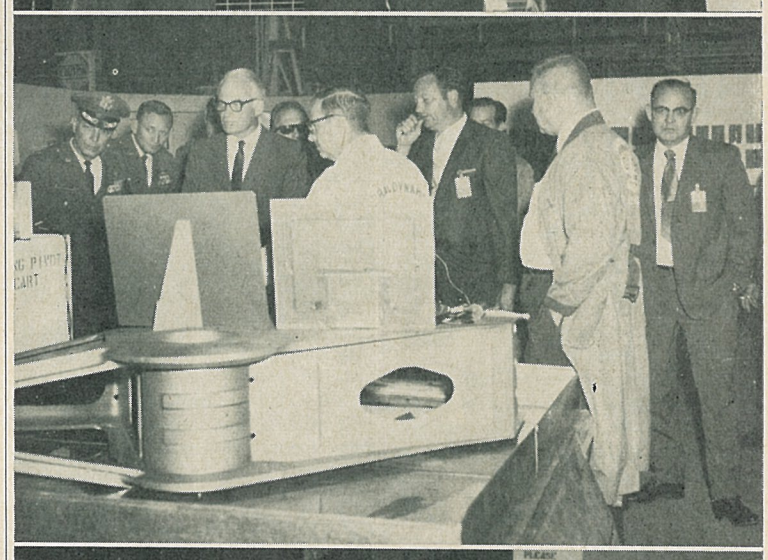
Senator Goldwater was "impressed" with his inspection of the F-111 proof-testing operation.

"Of course," he said, "these procedures are not necessarily foreign to me because I've been interested in electronics all my life. But I think your ultrasonic approach to these tests and inspections is excellent. It opens up a new field.

"And what I am mostly impressed by is the fact that you haven't found a flaw in any of those you've brought in from the field, which pretty well shoots down the idea that a pilot is unsafe flying this airplane.

"I've flown it myself, and I . . . can't wait for you to get them back to Nellis so I can get another ride."





VIP VISITOR—Senator Barry Goldwater observed F-111 inspection techniques first-hand during recent visit to Fort Worth division. In top photo, senator is greeted by M. C. Curtis, left, vice president-operations, and F. A. Curtis, right, director F-111 engineering project office. Below, Senator Goldwater looks at replica used in magnetic rubber inspection and observes delta-scan technique on wing carry-through section.

Three-Day Weekend Will Mark July 4

Another three-day weekend is in the offing for General Dynamics people during the July 4th Independence Day observance.

Since the Fourth falls on Saturday, GD people will suspend work Friday, July 3, except for necessary security and maintenance functions.

All operations will resume at regular hours Monday, July 6.

Vendor Awarded $6,936 For Cost Saving Idea

Astrospar Inc., a Convair division supplier firm specializing in three-dimensional profile milling in City of Industry, Calif., has been presented a $6,936.57 Convair Value Engineering award for suggesting a change that will reduce cost in production of center-body beams for F-111 spike assemblies.

The assemblies, provided by Convair under Fort Worth division subcontract, regulate air flow into the F-111 engines for optimum engine performance at varying speeds.

George W. Cowan, a Convair purchasing agent, said Astrospar previously was being provided 8 x 82-inch aluminum plate material for use in machining of each beam.

"Personnel from the firm determined two of the beams could be produced from 11¾ x 83-inch plate and suggested that it be provided in that size," he said.

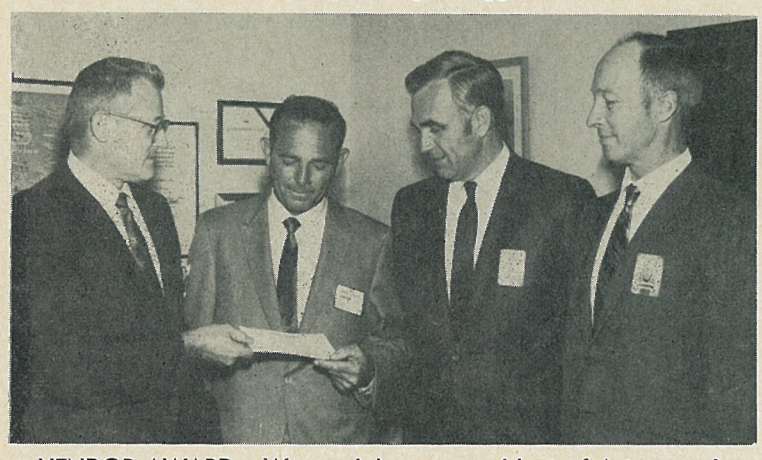
"Our material cost has been reduced substantially because we now get six instead of four spars from each standard-size 36 x 96-inch plate."

H. E. Moose, Convair director of material, presented the VE award check to Wayne Johnson, Astrospar president, in a ceremony June 4 in the Kearny Mesa plant.

Cost saving from the Astrospar VE proposal under the current contract will total $107,810. Additional awards may be made for savings under follow-on contracts for as long as three years.

R. N. Babcock, Convair manager of outside production, said Value Engineering clauses are included in all purchase orders for more than $50,000. The supplier firms can earn up to 50 per cent of savings achieved.

"Unfortunately, many of our suppliers have overlooked this opportunity to increase their profits," Babcock said. "We've made only two awards during the past several months. There must be many additional opportunities—and all it takes is the right suggestion."



VENDOR AWARD—Wayne Johnson, president of Astrospar Inc., second from left, receives $6,936.57 value engineering award check from H. E. Moose, Convair division's director of material, for suggesting material size change that will reduce cost of producing F-111 parts. Looking on are R. N. Babcock, manager of outside production, and G. W. Cowan, right, purchasing agent.

High School, College Students Obtain Convair Summer Jobs

Ten deserving high school and college students were employed for the summer by Convair division through the recent San Diego Job Fair.

Cindy Santos, one of the 10, recently completed her sophomore year at Chapman College in Orange and will be spending her third summer with the division.

Most of those recruited began work this week in clerical positions in industrial relations, accounting, contracts, and engineering department offices.

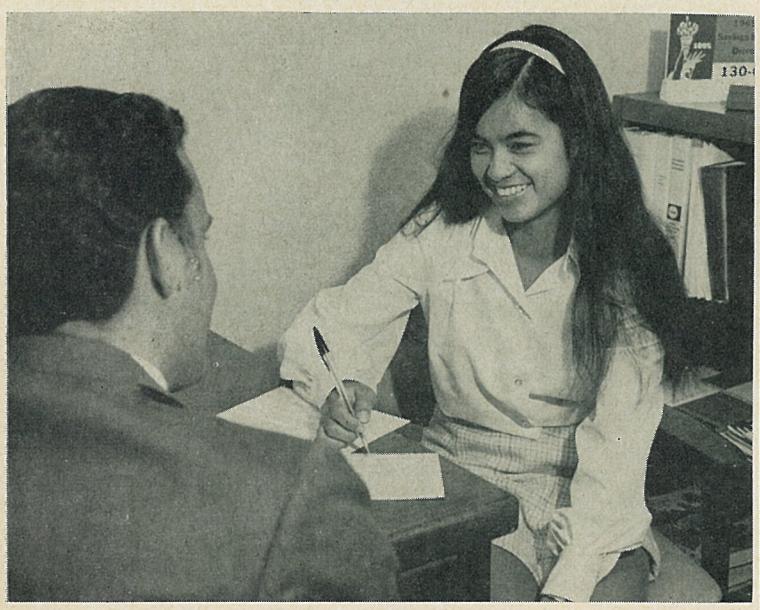
Don Wilde, Convair Dept. 130-6 employment supervisor, and Bruce Bolen, a Dept. 130-3 special courses instructor, provided counseling and conducted employment interviews for the division at the Fair.

Bolen headed a 10-man volunteer city-wide recruiting team that during May obtained pledges for 82 student jobs from San Diego business and industrial firms to be filled at the Job Fair.

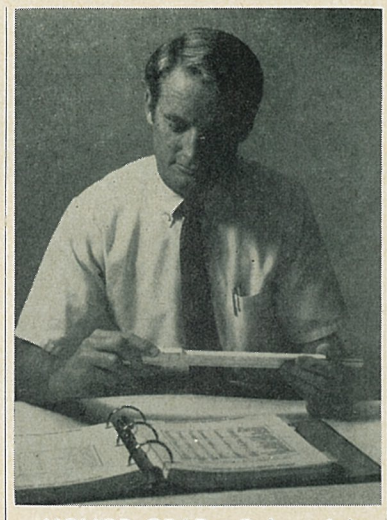
He also interviewed and hired 30 youths for firms that had pledged jobs but were unable to have representatives present. The Job Fair was sponsored by the San Diego Junior Chamber of Commerce and had "Today's youth—tomorrow's future" as its theme.

M. V. Wisdom, Convair director of industrial relations, said summer employment for the students, in addition to providing needed income, gives them valuable experience and exposure to business and industrial operations.

"We are pleased Convair division and its representatives could contribute to the Job Fair's success," he said.



FAIR HIRE—Cindy U. Santos, right, who just completed sophomore year at Chapman College, signs for third consecutive summer of employment at Convair. She is one of ten hired by division for summer work during recent San Diego Job Fair. Handling sign-up is Bruce M. Bolen, Convair coordinator.



HONOR GRAD—Robert Johnston of Convair's Dept. 588-0 was one of top 10 students academically of 4,000 graduated from San Diego State College.

State College Degree Caps 6½ Yrs. Study

Few of the thousands of seniors recently graduated from San Diego State College worked as hard and garnered as many academic achievement honors as Robert E. Johnston, a Convair division senior engineer in mass properties Dept. 538-0 at Lindbergh Field.

Johnston received a degree in operations management after having earned 131 units of credit in 6½ years of late afternoon and evening study.

Perhaps more important are the academic achievement awards he has earned.

Johnston was graduated with "highest honors," the highest achievement of academic work at the college, and was named the most outstanding student in the school of business.

He was among the top 10 students academically of the 4,000 graduating seniors, having earned a grade point average of 3.88 on a maximum scale of 4.

In addition, he was graduated with "distinction" in his major field. He has been named to Phi Kappa Phi, highest scholastic achievement society at the college, and has been elected to Beta Gamma Sigma, national business honorary society, and Sigma Iota Epsilon, national management honorary society.

Johnston, a Convair employe for 17½ years, figures his college record should provide encouragement for others to "work diligently toward a goal."

The hours he has spent in the classroom and on homework haven't hampered his work on the job, either. A supervisor for several years calls him "one of the best men we've had in the predesign section."

Johnston joined Convair as a stock clerk and moved into engineering after earning an aeronautical engineering degree through a correspondence course from an unaccredited institution.

It was his recognition of the limitations inherent in that training that led him to pursue a degree through evening study.

Johnston and his wife have three sons ranging in age from 8 to 15.

Con-Trib Approves $22,045 in Grants

Convair division's Con-Trib-Club committee at its June 11 meeting approved grants totaling $22,045 for five health and youth service organizations in San Diego County.

Included was $11,000 for the American Cancer Society, $2,500 for the Epilepsy Society, $5,000 to the Angels Unaware branch of the San Diego County Retarded Children's Association toward a building fund for enclosure of its swimming pool, $1,545 to William J. Oakes branch of Boys' Club of San Diego toward replacement of its swimming pool boiler and water heater, and $2,000 to the Salvation Army for its summer camping programs.

Built in Garage

Really a 'Model' Police Dept.

Three Convair division employes were among those who designed and fabricated a 1/12 scale model of the San Diego police business office for use in the recent police department open house.

Ray L. Richmond, a police reserve sergeant and model builder in Convair's wind tunnel, was in charge of the project. He solicited the help of his supervisor, Joe Turner, and John Beard, wind tunnel design engineer.

Turner aided in fabrication and Beard scaled, detailed and sketched a dimensional blueprint of the model.

Material for the project, including a tape deck, was supplied by the police and most of the work was done in Richmond's garage.

Work on the model began in late January and was completed and installed May 2. Richmond said about six volunteers, both Convair men and police reservists, worked on the model each weekend and he worked most evenings on small parts. All total, he estimates about 2,700 manhours were put into the project!

The business office model has a tape narration which traces by a series of lights, moving to various desks, an incoming emergency call and ends with the final dispatching of an emergency unit.

The model includes such minute details as chalk on blackboards, personal items placed in the office by employes such as a thermometer hanging on a chart, a bulletin board with police organizational chart and the ten "most wanted" list, all in miniature.

Richmond pointed out one discrepancy in the model on the bulletin board. He stated that "Since the model has been installed, the actual bulletin board has been tidied up considerably."

Beard noted that the unsung hero of the entire project was Mrs. Richmond who fed the work crew, keeping them supplied with sandwiches.

The model, one of many used during the open house, is now a permanent fixture. San Diego Police Chief O. J. Roed explained that the department plans to use the model as a training aid for new recruits and for public tours of the department.

POLICE MODEL—Ray L. Richmond, right, Convair model builder and police reserve sergeant, points out areas of interest on model of San Diego police administration office to John E. Beard, left, Convair design engineer, and Chief O. J. Roed. Model was used in conjunction with recent police department open house.

Convair Operations Functions Undergo Reorganization Along Division-wide Line

(Continued from Page 1)

facturing for the space shuttle program, will continue to assist as acting program manager for Atlas operations (Dept. 212-0).

R. D. Daly, works manager at Quincy Shipbuilding division since 1968, has been named manager of assembly for Convair (Dept. 740-0).

Reporting to Adamson, in addition to Daly, are C. F. Blair, manager of fabrication (Dept. 720-0); F. B. Kemper, manager of electronics manufacturing (Dept. 780-0); E. H. Damarus, manager of production engineering (Dept. 400-0); and N. R. Keough, manager of experimental (Dept. 031-0).

Van Horn, a 30-year veteran in the aerospace industry, has been with General Dynamics since 1950 and has been director of operations for Convair since 1967. He formerly served as Lindbergh Field plant operations manager and Kearny Mesa plant works manager and headed the Atlas weapons system during its developmental phase.

Adamson has been with General Dynamics since 1943 and has been manager of operations at the Lindbergh Field plant since 1967. He previously held numerous program manager and engineering assignments with the division.

Daly had been with Convair and the former Astronautics division 12 years before joining Quincy Shipbuilding division Feb. 26, 1968. He formerly had served as manager of operations at Kearny Mesa and as launch operations manager a t Vandenberg AFB.

First-Quarter Report Will Be Distributed

Copies of the General Dynamics report to share owners for the three-month period ending March 31 are being distributed through supervision this week to Convair division employes enrolled in company Savings and Stock Investment Plans.

Photos featured on the report cover are of a DC-10 section in the Aero Spacelines' Super Guppy and of the Convair composite-material buoy being prepared for use in the sea lanes test program.

50 NEW DANCERS QUALIFY FOR CLUB

Dynamic Eights will welcome 50 new members at their regular dance 8 - 10:30 p.m. tomorrow, June 25, at CRA Clubhouse. New members recently completed an 18-week beginners' course instructed by Clark Elliott.

Weekend Phone Reminder Given

Convair division employes have been reminded that plant telephone switchboards are closed on weekends and that incoming calls to on-duty personnel can be received only through special "night line" numbers. Charlotte Bowen, telecommunications supervisor, said other incoming calls are diverted at random to the open "night line" extensions.

Emergency messages for on-duty employes may be directed to security phones—277-8407 or 277-6843 at Kearny Mesa, 296-4589 at Lindbergh Field, and 297-2303 at AF Plant 19.

Fort Worth Planning Vigorous Effort Toward F-111 Follow-on

Our survival depends on our ability to keep the F-111 program going, and we're making every effort to do so, President Frank W. Davis said last week.

"We've already spent considerable time on advanced and more attractive versions of the F-111," he said, "and we'll continue to press these efforts vigorously.

"Our plan for the immediate future is to make every effort to keep both the tactical-fighter and the bomber versions of the F-111 in production beyond the current cutoff date of 1972.

"As you know, the FB-111 is just starting its operational career. Certainly we can expect many improvements in later models."

While eagerly seeking new F-111 business, the division will step up its sales efforts in other areas and seek new subcontract work.

"Still," Davis said, "the F-111 is our main business right now, and we've simply got to make the program go."

Davis said the division would conduct intensive cost-effectiveness programs to match the F-111 with other aircraft such as the F-14 and F-15—and even the B-1.

"I feel the F-111 is the most versatile and effective aircraft in production," Davis said. "There's every reason to believe it can compete with any airplane—even the B-1—on a cost-effective basis.

"However, the only way we can continue to compete is to keep costs down and deliver F-111s on schedule. We've been through this sort of thing before, but this time it'll be a little harder.

"Our fixed overhead is higher. For example, we have a new engineering building — which we've always needed—and $50 million in modern new machine tools. Fringe benefits are also more costly than ever.

"This means, of course, that we'll have to take a hard, close look at all overhead expense. We'll simply have to operate more frugally."

Davis said the previously planned reduction in force of about 4,000 would probably be carried out by the end of the year. Reductions through 1971 could go as high as 14,000, he said, if additional F-111 business is not obtained.

"We will make every effort," he said, "to stabilize the work force by getting additional F-111 and other business."

Davis expressed "severe disappointment" in the division's failure to win the B-1 contract. "But rather than speculate on why we didn't win," he said, "I'd rather stress what we can do to make things better . . .

"Actually, I think the defeat can open new doors for us—new doors to additional F-111 business and to new and challenging projects.

"But the only way we can do these things is to stay competitive. And the only way we can compete is to shrink our overhead cost and direct manhours to keep costs at an absolute minimum.

"We must do this because defense dollars are going to be hard to get in 1971, and even harder to come by in fiscal 1972.

"We've got our work cut out for us," Davis said. "But we ain't dead yet, and I have every confidence we will survive."

You Can Become Regular Bond Buyer For 50 Cents a Week

COST REDUCER—J. E. Hall, center, GD/Electronics-SD associate engineer, receives Cost Improvement Proposal certificate from D. C. Prim, left, Electronics-SD manager. Hall was credited with saving $2,500 for proposing transfer of release analyst tasks from engineering prints file to quality assurance, eliminating duplication of effort and reducing manpower requirements. R. H. Nicholson, manager of quality control, was on hand to offer congratulations.

COLLEGE CASH—Jess Cook, left, Convair Management Association president, poses with club scholarship winners after presenting $500 checks. Winners, from left, Robyn Watson, Donald Risty II, Ruth Reinman, Glen Evans, James Leger. All have Convair parents.

Salvage Yard Plans To Sell Typewriters

Convair salvage office is accepting bids on fifteen IBM electric typewriters, which may be inspected from 8 a.m. until noon, June 27, at the Convair salvage yard, Lindbergh Field plant.

Forms for bids are available at both Kearny Mesa and Lindberg Field salvage offices. Bids will be opened at 1:30 p.m., June 30.

NCMA Chapter Elects Col. Merz

Col. Charles F. Merz, San Diego district commander of Defense Contract Administration Services, recently was elected vice president of the San Diego chapter of the National Contract Management Association, succeeding Cliff Crane of AMTEK Straza who became president. Jack Edwards of Convair's Dept. 110-1 was outgoing president.

The San Diego chapter was host last weekend (June 20) for an installation meeting of NCMA national officers. Frank Curran, mayor of San Diego, was to be installing officer and Rear Adm. J. L. Howard, deputy director for contract administration services, was to be principal speaker.

Colleges Offering LF Plant Courses

San Diego Community Colleges are offering five summer session 3-unit courses to hourly and salaried Convair division personnel. Classes will be at the Lindbergh Field plant, Bldg. 14, 4-7 p.m., beginning the week of June 29.

Industrial Blueprint Reading, Shop Math, Introduction to Supervision, Human Relations II, and Effective Speaking will be offered.

For information or preregistration call Mary Carter of educational services, ext. 2564 LF.

Baseball Night Tickets on Sale

Tickets are on sale at $1.50 each (a $1 saving) for the annual "baseball night" to be sponsored July 10 by Convair Management Association at San Diego Stadium.

Each covers a loge seat for the San Diego Padres vs. Los Angeles Dodgers game and a chance in a drawing for a $500 vacation trip of the winner's choice.

Tickets may be purchased through employe benefits and CRA outlets and at several other in-plant locations.

Last Lunch Ticket Winner Names Drawn

Winners of free lunches in the final weekly drawing for Employe Suggestion submitters have been announced by E. D. Heller, manager of cost reduction and value control.

First-time 1970 ES submitters receiving meal tickets were J. J. Boyer, Dept. 045-0; Wilhemena Broderick, 954-3; J. J. Zagami, 831-0; F. J. Trout, 780-4; and M. P. Robbins, 780-6.

Repeat suggesters whose names were drawn were Warren Ross, 015-0; Stefan Smolka, 015-0; C. E. Boyd, 149-3; J. E. Harper, 149-8; and L. A. Horde, 420-6.

Sweeney, Blevins End Convair Service

Larry Sweeney, group supervisor for Convair division's program control scheduling Dept. 059-2 and former (1966-67) president of the Convair Management Association, retires Friday (June 26) after almost 28 years service with the division. He plans to obtain a real estate broker's license and to continue work—but at a more leisurely pace.

Among recent retirees known by many employes was H. R. Blevins, a plant security guard since 1952.

Sports & Recreation

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 KM. Deadline for next issue of GD/NEWS is June 30. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS — Fourth of July weekend, July 3-5, Baker Lake near Bishop.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB—North County 50-mile ride, 7:30 a.m., June 27, meet Salk Institute.

BONAIR FLYERS—Meeting 7:30 p.m., July 2.

BRIDGE — Duplicate bridge sessions each Friday 7:30 p.m.

CERAMICS—Meet 9 a.m. - noon and 7-10 p.m., Tuesdays and Thursdays.

CHESS CLUB—Play July 1, 7 p.m.

CHORUS—Rehearsals 7:30 p.m., Mondays.

COUNTRY & WESTERN MUSIC—Meet 7:30 p.m., each Thursday, CRA Missile Park picnic shelter.

FENCING—Workouts and instruction, 7:30-10:30 p.m. Fridays, YWCA, 10th & C Sts.

GARDEN CLUB—Meet 7:30 p.m., July 1, Floral Association Bldg., Balboa Park.

GOLF—Escondido tourney, June 27-28.

GUN CLUB—Fun Shoot, 9 a.m., June 28, Gillespie Field gun range.

HEALTH CLUB—Open 9:30 a.m. - 10 p.m., Monday through Thursday; 9:30 a.m. - 9 p.m., Fridays; 10 a.m. - 5 p.m., Saturdays; "women only" weekdays, 9:30 - 11 a.m.

ICE SKATING—GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1 (includes skates).

MINIATURE RAILROAD — Operating sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Wednesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Shoot 9:15 a.m., June 28, San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB—Meeting July 2, 7:30 p.m.

RIFLE CLUB—Senior shoot 7 p.m., tonight, June 24, Gillespie Field range.

ROADRUNNERS — Meet 7:30 p.m., June 25, Gillespie Field.

SAILING — Meet 7:30 p.m. tonight, June 24.

SCULPTURE—Workshop sessions 7:30-10:30 p.m., Mondays.

SKI CLUB—Meeting 8 p.m., July 7, South Bay Club.

SQUARE DANCE—Dance Thursdays, 8-10 p.m.

STAMP CLUB — Meeting 7:30 p.m., June 25.

SWIMMING—GD family swim night 7-9 p.m., July 18. Tickets at employe benefits outlets, 5 cents.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays, 10 a.m. - 4 p.m.

TOASTMASTERS—Convair Toastmasters meet each Wednesday, 4:30 p.m. Dynamic Toastmasters meet 5:30 p.m., Thursdays.

TRAILERS—Meet 7:30 p.m., July 7.

WOMEN'S GOLF—Chula Vista tourney, July 11, 9:30 a.m. tee-off time.

Coineers Will Hear Lecture on Mint

Operations at the Franklin Mint in Yeadon, Pa., largest private mint in the world, will be described by Stu Edgerton, a local numismatist, at a meeting of the CRA Coineers at 7:30 p.m. July 13 in the CRA Clubhouse auditorium.

The Franklin Mint provides coins for several foreign countries, provides assistance for U.S. federal mints in some operations, and produces commemorative medals.

Theme for exhibits at the July meeting will be "patriotic" and a trophy will be awarded for best display. Refreshments will be served and door prizes, give-away coins, an auction, and a drawing are scheduled. Visitors have been invited.

Xs Determine Wins For Pistol Shooters

Tie scores were broken by counting the Xs in two events in CRA Pistol Club's June 14 meet at the police range.

Jim Halfacre's 286 and 11 Xs edged Red Schneider's 286 and 8 Xs for top master class score in .22-caliber firing. Richard Sutton and Jerry Lehrer both fired 281 in expert class but Sutton had 13 Xs to Lehrer's 5.

Winners in the .45-caliber short-national match were Schneider, 256; Charley Kropp, 251; Halfacre, 250; and Sutton, 240.

When telephoning, never mind the weather. Get to the point. Telephone time costs money.

Adventurers Club Slates Sierras Trip

CRA Adventurers Club will travel to Baker Lake in the Sierras for a hiking and fishing weekend, July 3-5.

Driving distance from San Diego to rendezvous point at Bishop is 342 miles. Members will caravan for 20 miles to the lakes.

Camp will be set up nearby. Wood is available, but there are no stores or sanitary facilities.

A four - wheel - drive trip has been planned to Hidden Lake.

For more information call trip leaders Rodney Bowen, 278-9846 or Bill Newton, 273-2478.

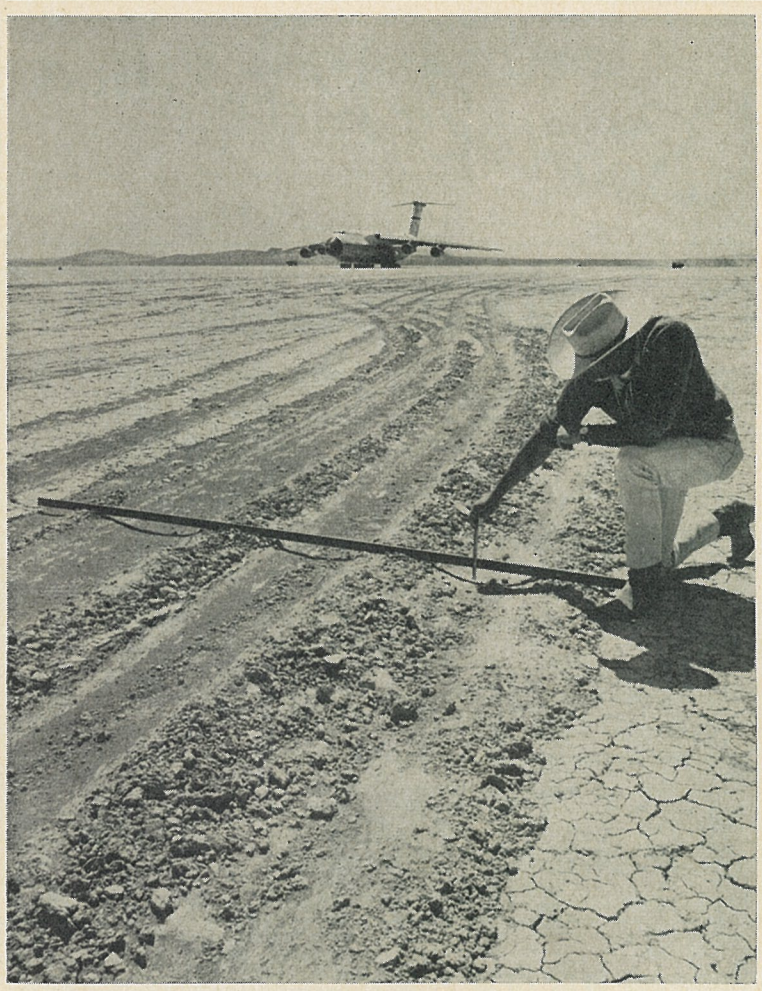
Bicycle Club Plans North County Trip

The CRA Bicycle Club is planning a 50-mile joint North County ride with San Diego Wheelman Club.

Riders will meet at Salk Institute at 7:30 a.m., Saturday, June 27, and pedal through Rancho Santa Fe to Oceanside and return to San Diego.

For information call ride leader Bob Williams, ext. 1148 LF or (home) 222-3560.

PAINTING PRESENTED—Symbolic oil painting of DC-10 tri-jet-liner flight over Sheridan-Gray 500-ton-stretch press at Convair division's Kearny Mesa plant is presented by Lanny R. Gray, right, president of Sheridan-Gray, Inc., to Don Fagan, director of manufacturing for space shuttle program. DC-10 fuselage skins are being stretched-formed on giant press.



"DIRT" LANDING—Giant C-5 Galaxy is shown in background as engineer measures depth of ruts made by landing gear in surface of dry lake in Mojave Desert. Convair division builds empennage for C-5.

Dirt Floor of Dry Lake Used For C-5 Landings

Old-time barnstorming flyers picked a pasture close to town and landed. You wouldn't expect pilots of the world's largest airplane to do the same, and they don't. But, they've come close.

A Lockheed-Georgia Co. C-5 Galaxy flying out of the Air Force Flight Test Center at Edwards AFB, is conducting preliminary landing, taxi, and takeoff tests on the bare soil of Harpers Dry Lake in the Mojave Desert.

At a weight of more than 600,000 pounds, the huge airlifter dug ruts only four inches deep during taxi operations over the lake bed, and kept rolling.

Other large transports have landing gear designed to operate only on concrete or macadam runways. Not so the C-5 — which has 28 widely-spaced wheels that spread the total weight over a larger "footprint" instead of concentrating it at a few points.

Each of the four main landing gear struts has six wheels arranged in a triangular pattern. The nose gear has four wheels abreast. Together they give the C-5 "high flotation"—the ability to keep moving over ground that would bog down other airplanes one-half or even one-fourth its size and weight.

Convair division builds C-5 empennages under subcontract from Lockheed.

Lockheed and Air Force flight test crews made the first C-5 bare soil landings at 470,000 pounds, creating two-inch ruts. Taxiing at speeds of 10, 20, and 50 knots and making turns through 360 degrees, the Galaxy cut ruts three inches deep.

Test directors chose the dry lake bed because it offers a relatively stable surface hardness in the desert climate during the course of testing.

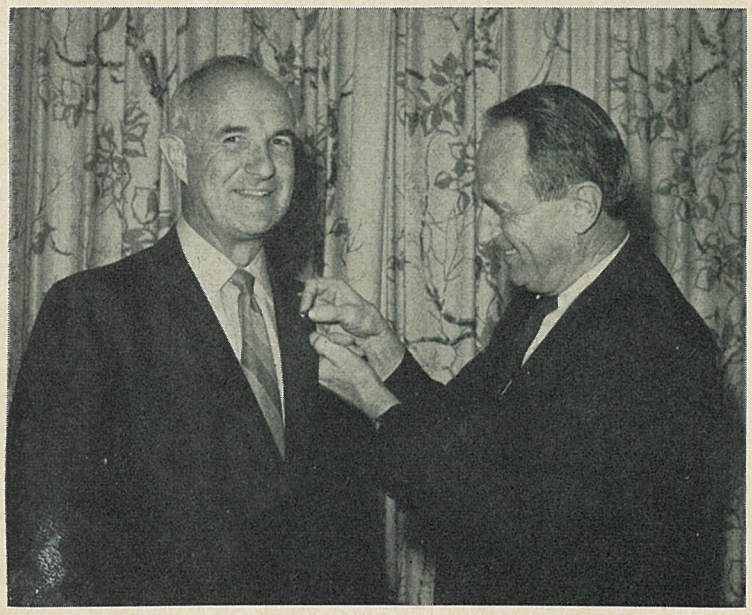
The C-5's final demonstrations will come on these prepared surfaces that compare to a football field or a professional baseball diamond, by completing 130 takeoffs and landings over the same runway without undue field surface repairs required.

Scientists to Give Papers at AIAA Meet

Two Fort Worth division scientists will present papers at the Fifth Thermophysics Conference of the American Institute of Astronautics and Aeronautics in Los Angeles June 29-July 1.

Dr. John Romanko, staff scientist, will talk on "Cathodoluminescence in Thermal Coatings." He will be assisted by J. K. Miles and P. R. Cheever, senior nuclear physicists.

"Thermal Testing of Inflatable Solar Shields for Cryogenic Space Vehicles" will be the topic of Dr. R. O. Doughty, senior aerothermodynamics engineer. He will be assisted by L. R. Jones, project aerothermodynamics engineer.



20-YEAR MAN—Jack L. Bowers, president of Convair division and a Corporate vice president, received his 20-year service pin recently from Roger Lewis, General Dynamics president.

Ocean Station Buoy Ordered For Irish Sea

Trinity House Lighthouse Service, the general lighthouse authority for England, Wales, Channel Islands and Gibraltar, has ordered an ocean navigation station buoy from General Dynamics.

The buoy will be operational late this year in Morecambe Bay, an inlet of the Irish Sea on the northwest coast of England, guiding vessels with its 40,000-candlepower beacon and electric oscillator signal (fog horn).

Developed by Convair division, the buoy has a hull 40 feet in diameter and 7½ feet deep and can operate for months without maintenance under severe environmental conditions including hurricanes and typhoons.

The buoy's navigational aids are continuously controlled and monitored by a command station ashore via UHF radio link and by automatic equipment aboard the buoy. Onboard power is supplied by continuously operating diesel engine-generators.

Sufficient fuel is carried for two years of operation, although refueling every year is contemplated initially.

The new Trinity House buoy can serve as a weather station if desired. Oceanographic and meteorological data can be transmitted from buoy to shore over the command and monitoring radio link.

The buoy hull and superstructure will be constructed by Bristol Channel Ship Repairer, Cardiff. Installation and testing of power and other electronic equipment will be carried out by General Dynamics at the shipyard prior to delivery to Trinity House.

The buoy is similar to five production ocean navigation stations now being manufactured by General Dynamics for the U.S. Coast Guard. Navigation stations are scheduled to replace all lightships now in commission in the United States.

A prototype ocean navigation station buoy designed and manufactured by GD has been operating three years at the southern approach to New York Harbor, a station previously occupied by the lightship Scotland. The buoy has never had an unscheduled interruption or operational fault in its command system, despite operation through hot and humid summer weather, severe cold, high winds and heavy icing.

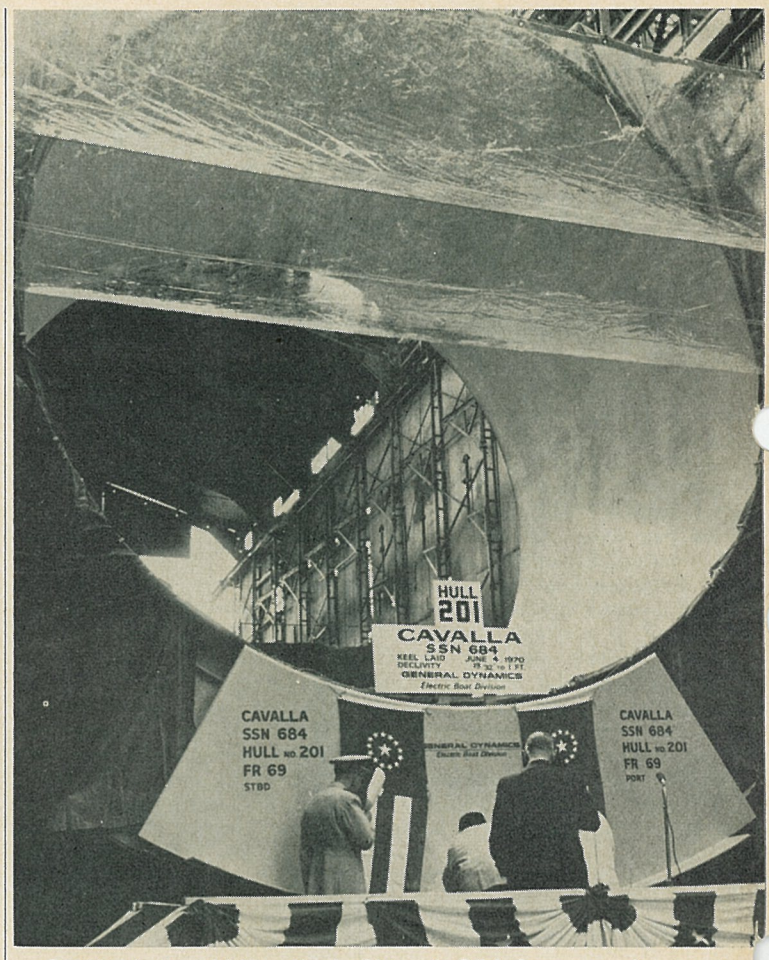
Earlier, a similar buoy was developed as an ocean data station for the U.S. Navy's office of Naval Research (ONR). The first ONR buoy—Buoy Bravo—was deployed in 1965 in the Gulf Stream off the Florida coast in anticipation of a hurricane. Bravo operated easily during her sea trials in 110-knot winds and 50-foot waves of hurricane Betsy.

Similar ONR buoys have assisted in the study of ocean/atmosphere relationships in the north-central Pacific Ocean. Moored in 18,000 feet of water for 10 to 12 months, they routinely transmit oceanographic and meteorological data on command, 2,300 miles to San Diego. In a few minutes, information from the preceding 24 hours is telemetered, recorded for analysis and relayed to the U.S. Weather Bureau and to the Bureau of Commercial Fisheries.

Another ocean data station buoy, developed for ONR and on loan to the U.S. Coast Guard, is providing environmental data in the Atlantic Ocean approximately 125 miles east of Portsmouth, Va. This buoy, on the northern edge of the main Gulf Stream, is a key element in an effort to improve weather forecasting for the East Coast.

The remote station near San Diego, more than 3,000 miles away, interrogates the buoy every six hours and receives and interprets its radio transmission.

Be sure to use the ZIP code when addressing mail. It speeds up delivery!



CAVALLA KEEL LAID—Keel of Navy's 35th Sturgeon-class nuclear powered submarine Cavalla (SSN 684) was laid in ceremonies at Electric Boat division this month.

Code-to-Teletype Converter Developed by Dynatronics

An automatic Morse code-to-teletype and teletype-to-Morse converter has been developed by General Dynamics under a contract with the U.S. Army Electronics Command at Fort Monmouth, N.J.

The new equipment, designated the AN/GSA-124 (XE-1), can be installed at second echelon, command post or base-level stations to speed message handling and to improve communications with forward units, field forces and mobile or portable radio stations.

The equipment, first of its type to be built to military specifications, was developed by Electronics division at its Dynatronics plant in Orlando, Fla. The system was demonstrated recently at the Armed Forces Communications Electronics Association meeting in Washington, D.C.

The system accepts machine-sent Morse code at a burst rate of 300 words per minute or hand-sent code at 5 to 30 words per minute over a large dynamic range. For hand-sent, it can "track the fist" of the operator, adjusting to his speed. The received data is automatically converted to teletype code for local printout or for tape entry into communication networks.

For transmission, the equipment accepts hand-key Morse code, locally generated teletype tapes or teletype tapes received from a communications network. It converts teletype data to Morse code signals and transmits at selectable speeds from 5 to 30 words per minute to the field operators, or at burst rates of 300 words per minute to Morse code machine copiers.

Transmission and reception can be in either a 2 KHz CW mode or 850 Hz FSK, centered on 2 KHz. The system operates with radio sets presently deployed and those under development. Each half of the duplex system, as well as each individual unit, contains self-testing capabilities.

The major units — detector, Morse-Baudot converter, buffer storage, photoelectric paper tape reader, converter and modulator — are capable of independent operation.

Federal Surcharge Will End July 1

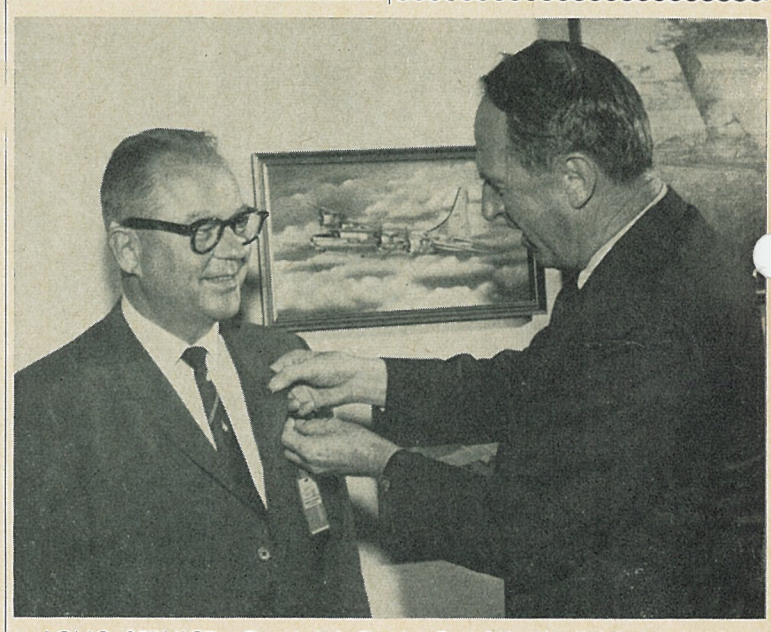
The 5 per cent federal surcharge on income tax withheld from employes' paychecks will be eliminated July 1.

The Tax Reform Act of 1969 reduced the federal tax surcharge from 10 to 5 per cent effective the first of 1970 and provided the surcharge be dropped entirely by next month.

If the act remains in effect, further tax reductions will be seen in 1971, 1972 and 1973.

The exact amount of decrease depends in part upon the number of personal exemptions.

General Dynamics is an Equal Opportunity employer.

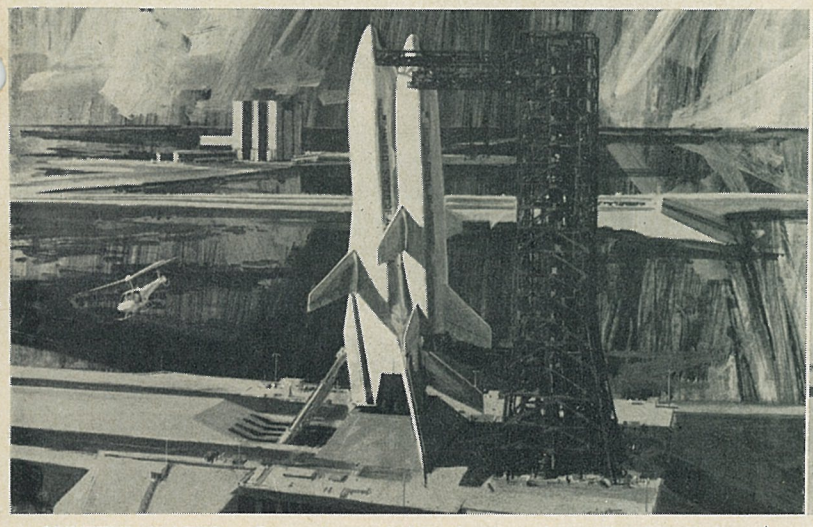


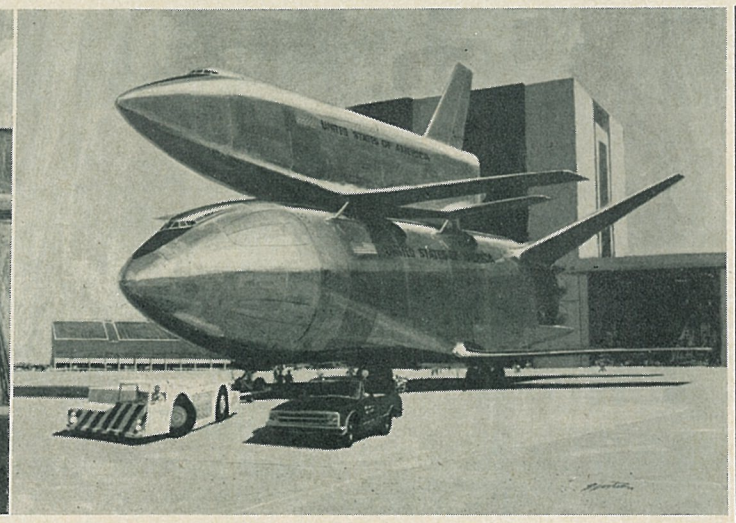
LONG SERVICE—Frank W. Davis, Fort Worth division president, receives 30-year pin from Roger Lewis, president of General Dynamics.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 23, No. 13 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, July 8, 1970





SHUTTLE MATES—Convair and North American Rockwell-designed space shuttle booster and orbiter vehicles are depicted by artist Roy Gjertson (right photo) being towed from maintenance and refurbishment facility to launch site and (at left) in launch position. Convair is conducting Phase B preliminary design study for booster under one-year NASA contract.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—Is it common practice to restrict an employe from possible overtime while serving on jury duty?

A—No. If an employe, having reported for jury duty, returns to work before his shift ends, and overtime is available, he is considered.

★ ★ ★

Q—While properly parked in one of Convair's parking lots, my car was struck and damaged to the extent of $162. I fully understand that the lot is optional and that Convair can bear no responsibility. However, could you arrange to publish my comment in *GD/NEWS*? There is a continuing effort aimed at motivating people to be careful with materials, parts, supplies, equipment, etc. Surely this should extend to the possessions of other employes. Whoever damaged my car undoubtedly carries liability insurance and the only honorable course would have been to leave his name and admit fault.

A—We couldn't agree with you more.

★ ★ ★

Q—Why can't *GD/NEWS* once a month carry a progress report on the current value status of units in the Savings and Stock Investment Plan?

A—The per unit rate is not available until at least 30 days, possibly 45 days, after the end of the month and by the time the figures could be published they would be far out of date and probably misleading because values are constantly subject to fluctuations.

★ ★ ★

Q—Would it be possible for members of the Savings and Stock Investment Plans to receive third-quarter status reports that would be helpful in making a decision as to exercising the short-term withdrawal privilege? Regarding funds subject to withdrawal, it would be helpful to have such information as closing value of GD stock, closing value of government bonds involved and closing value of diversified portfolio units, etc. I realize that because of the time lag and probable fluctuation in the meantime figures could not be up to the minute, but they would give us something on which to base a decision.

A—Your suggestion has merit and Corporate Headquarters expects to implement the practice this year.

★ ★ ★

Q—The menu at LF cafeteria changes from day to day, but it never changes from week to week. It's the same routine, chop suey on a certain day, Mexican food on another day, etc. Couldn't the cafeteria offer different dishes sometimes to break the monotony?

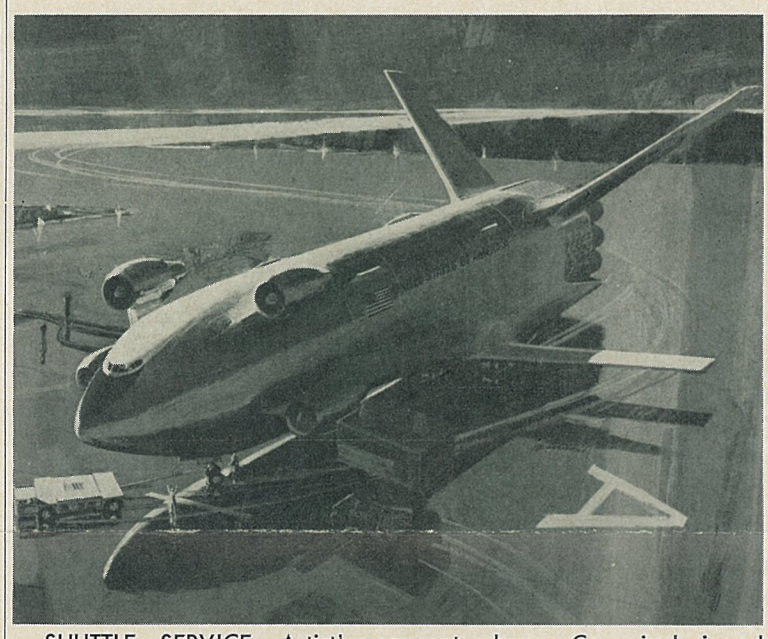
A—We are currently reviewing a five-week cycling menu for both KM and LF. The five-week cycling menu would have two main entrees appearing weekly and two entrees cycling every five weeks.

★ ★ ★

Q—Are pantsuits acceptable dress for feminine employes? They are attractive, fashionable and often less distracting than mini-skirts.

A—Supervisors must make this determination for each work area with a view to safety, good taste, etc. Pantsuits may be acceptable if appropriate to the work area.

(Continued on Page 4)



SHUTTLE SERVICE—Artist's concept shows Convair-designed space shuttle booster as it would appear being serviced after return from mission into space.

Extra Caution Is Plea To Cut Accident Rate

Convair division's safety record, while it might be envied by many industrial firms, is falling short of frequency and severity goals established at the start of 1970 and of the safety section's aim to have the best record in the aerospace industry. However, serious accidents have been reduced by 26 per cent.

"We are far from meeting our goal," Del Dimmitt, chief of fire and safety, said.

"During the first four months this year, nine of our employes sustained injuries severe enough to be classed as disabling and 52 were injured severely enough to be classed as serious medical cases."

Disabling injuries during the four months included:

1. A forearm fracture when an employe in the first-cut section of raw stores at LF slipped on some paper and fell.

2. Partial finger amputation when the head of a drill press fell in the LF tooling department because the clamping device was not tightened properly.

3. Severe abdominal laceration when a double end mill cutter flew out of a grinder in the LF tooling department due to excessive pressure being applied.

4. Partial amputation of a finger in a paper cutter in the LF graphic reproduction section.

5. Severe muscle and ligament strain of right thigh when a plant engineering office equipment mechanic slipped and fell in a water puddle at KM.

6. Multiple right foot fractures when metal material an LF tooling department employe was turning fell out of the clamp.

7. Depressed skull fracture suffered by an LF assembler working in a DC-10 fuselage section when a huck gun fell from an upper level.

8. Scalp laceration and back strain suffered by an LF machine shop employe when he stepped backward into a trailer and fell.

9. Compound fracture of forearm suffered by an AF Plant 19 assembler working on an F-111 spike assembly when he attempted to adjust a limit switch while the unit was being lowered into a retract position.

"In each case, an employe suf-

(Continued on Page 6)

Sheet Metal Leads Safety

Special 1970 safety Award of Merit certificates will be presentfor the first time to Convair division departments that complete this year without a serious or lost-time accident, Del Dimmitt, chief of fire and safety, has announced.

Sheet metal Dept. 001 last month was leading LF tool manufacturing machine shop Depts. 731/756, and plant engineering-maintenance Dept. 250-3/6 in Group 1 of the division's annual safety and housekeeping contest.

Leaders in Group 2 were data processing Dept. 101, electronics manufacturing Dept. 780 AGERD functions, reliability control Dept. 143, and process control quality engineering Dept. 141.

"It's a very close contest in

(Continued on Page 6)

Two Atlas Contracts Total $24 Million

Convair has received a letter contract for production of three Atlas SLV-3A and two Atlas SLV-3C boosters with an option for four additional SLV-3Cs for INTELSAT communications satellite launches. Total contract value is expected to be about $20 million.

The SLV-3A boosters will be for use with Agena second stage vehicles. The firm-order SLV-3Cs will be for NASA Mariner-Mars and Pioneer G-Jupiter flyby missions with Centaur D-1A second stage launch vehicles.

Convair earlier received a $4 million follow-on contract for two Atlas SLV-3C boosters for delivery in August and October next year and for use in the AC-28 and AC-29 INTELSAT launches.

H. A. Lambert, contracts administrator, said the orders were "biggest for the Atlas program since 1965."

NASA Signs Shuttle Go Ahead

NASA representatives last week signed an $8 million contract for a year-long North American Rockwell-Convair Phase B definition and preliminary design study of reusable space shuttle vehicles.

The last month covered by the contract will be for final report preparation. NASA officials have indicated, however, that Phase B studies may be extended beyond one year under supplemental agreements prior to Phase C-D detail design and vehicle fabrication and testing efforts.

NASA previously had announced selection of NR-Convair and McDonnell Douglas-Martin teams to conduct two parallel Phase B studies **(GD/NEWS, May 27).**

Three Convair space shuttle program representatives are in Bonn, Germany, for the two-day (July 7-8) European Launcher Development Organization (ELDO) and NASA-sponsored briefing on space transportation systems.

They are Dr. D. A. Dooley, vice president-space programs; Davy Jones, requirements director; and Don Fagan, director of manufacturing-space shuttle. Representing the NR Space division are W. B. Bergen, president; Bastian "Buz" Hello, vice president and general manager-space shuttle; and John Sandford, project director of program development and plans.

Key NASA participants include Dr. Thomas O. Paine, NASA administrator; Dr. Homer E. Newell, associate administrator; Dale Myers, associate administrator for manned space flight; Arnold Frutkin, assistant administrator for international affairs; Daniel Harnett, assistant administrator for industry affairs; William Cohen, director of international plans and programs; A. O. Tischler, director of chemical propulsion; Philip Culbertson, director of advanced manned missions; and Ward Wilcox, chief of liquid propulsion experimental engineering systems.

Presentations by the two Phase B study teams were given yesterday as well as presentations on program plans by Myers and on the payload impact of space

(Continued on Page 2)

GRADUATION GROUP—Recipients of certificates and degrees in industrial supervision were honored at June 22 awards dinner in Reuben E. Lee restaurant. Peter Torres and Roger Wallace (at right in second row) received Associate of Arts degrees. Receiving Certificates of Proficiency, from left, were (back row) Dean Weelborg, George Carroll, Ernest Horvath, Edward Ford, Robert Francella, Joseph Silva, Robert Came, Charles Cook, Jerry Van Wey, Marian Smolka, James Lemon, and David Dudbridge; (seated) Stanley Jachimowicz, Linwood Lee, Lynn William, Lew Chapman, Fred Campos, Conrad Snyder, and Dave Galloway. Don Maguire and Fred Hagen were not present.

USIU HONORS—Bill Barbic of Convair's Dept. 195-1, second from right, receives Wall Street Journal award medallion from Dr. Andrew Papageorge, acting dean of graduate school of business administration at United States International University, as K. E. Newton, director of launch vehicle programs, and J. D. Milling, controller, look on at left. Bill McGrew of Dept. 986-6, right, received Convair-sponsored award as outstanding graduate in Master of Science in Management Science program.

Log Book Entries

Awards

CONVAIR

Employe Suggestions awards approved for the week ending June 26:

M. Alianelli, Dept. 835-1, $50; J. W. Blankenship, 143-4, $50; C. S. Campanella, 149-6, $15; C. J. Collins, 250-1, $30 (two awards); J. Cook, 985-4, $48; H. Daw, 401-4, $15; W. J. Day, 002-0, $38; B. A. Dill, 565-1, $213.70; S. C. Dormier, 101-6, $15; F. A. Fowler Jr., 045-0, $15; H. M. Harvey, 565-1, $1,173.62; A. F. Hyland, 985-1, $346.50; R. J. Kolek, 144-1, $15; M. L. Lodge, 250-1, $75.80; R. V. Lucero, 019-0, $15; R. Mastny, 015-0, $44.80; R. G. McKellips, 780-4, $15; J. C. Morales, 002-0, $7.50; R. M. Nash, 460-0, $15; C. A. Nelson, 002-0, $38; S. Robles Jr., 141-4, $15; C. E. Schultz, 001-0, $7.50; M. H. Scott Jr., 951-6, $51; J. W. Slattery, 553-1, $300; B. Thompson, 149-8, $15; J. L. Vidovich, 407-0, $15; E. A. Wimp, 046-0, $15; A. B. Wood Sr., 101-7, $34.80; K. T. Younghusband, 962-8, $103.20.

Employe Suggestion awards approved for week ending June 19:

B. J. Adams, Dept. 979-3, $20; R. M. Anderson, 578-5, $34.60; H. A. Benner, 143-4, $15; W. S. Betts Jr., 584-0, $15; W. T. Black, 985-4, $15; W. L. Burkhalter, 144-1, $15; M. D. Chambers, 565-3, $80.20; F. M. Church, 046-0, $15; V. E. Cole, 759-0, $19.60; J. E. Damon Jr., 966-3, $15; J. A. DeGrazier, 953-1, $15; W. A. Dickenson, 059-3, $47.40; G. R. Dodds, 401-4, $869.60; D. M. Dvorak, 059-4, $124.40; H. M. Fisher, 507-0, $92; L. R. Fowler, 566-2, $1,002; C. R. Geiberger, 145-1, $15; M. J. Gerhardt, 149-0, $19.10; F. Gomez Jr., 019-0, $27; M. D. Herndon, 001-0, $15; G. Johnston, 780-1, $15; L. M. Jones, 143-4, $45.20; P. E. Langley, 524-3, $15; C. J. Lewis, 250-1, $15; G. E. Lopez, 019-0, $63; R. M. Lopez, 046-0, $15; F. Malcangio, 019-0, $34.40; O. F. Martin, 985-3, $15; S. C. McFarland, 148-2, $44.80; N. F. Peters, 574-3, $15; H. H. Richter, 524-5, $15; M. H. Schultz, 780-5, $53; W. H. Teter, 985-4, $15.

"Cost Reducers"

CONVAIR

Cost Reduction Achievement pins presented:

Five-credit pins—L. R. Fowler, Dept. 533-1; J. K. Wyckoff, 533-1; H. Richter, 524-5; and C. J. Lewis Jr., 250-1.

Lost & Found

CONVAIR

FOUND — Wedding ring June 6 in CRA Sailing Club boat. Phone Joe Basquez, ext. 2461 LF.

Personals

CONVAIR

I want to thank my Convair friends who helped with blood donations, cards, and warm wishes during the open heart surgery on my 7-year-old son, David. He is doing fine and improving every day.

J. E. Conklin, Dept. 027.

Deaths

CONVAIR

HERB—Frank P., retired Dept. 44-1, Sept. 29, 1961, died April 19. Survived by his wife, Ethel.

Papers Presented

CONVAIR

CHRISTIAN—Jack R., Dept. 572. "Materials & fabrication development & application studies of aluminum - boron-stainless steel composites." American Society for Mechanical Engineers, Brussels, Belgium, May 24-28.

CUMMING—D. P., W. H. **LOWE**, Dept. 507. "Subsonic testing in an intermittent blowdown supersonic wind tunnel." AIAA Aerodynamic Testing Conference, Tullahoma, Tenn., May 18.

DEVEREUX—R. F., Dept. 506. "Telemetry of oceanographic data from the North Pacific and Atlantic Oceans. IEEE Regional Conference, Seattle, Wash., May 28.

GELLIS—P. E., Dept. 144. "Quality control education in the high school." American Society for Quality Control, Pittsburgh, Penn. May 9-12.

GOODMAN—S., M. S. **HERSH**, H. R. **WIANT**, Dept. 572. "Advanced joining methods for aluminum-boron composites." TMS Spring Meeting, Las Vegas, Nevada, May 14.

WRAY—Dr. J. H., Dept. 596. "Directional and bidirectional reflectance measurements of space objects materials." Midcourse Measurements Meeting, Huntsville, Alabama, May 1.

Papers presented at the Society of Aeronautical Weight Engineers, Washington, D. C., May 4-7.

FRENCH—M. L., B. H. **OMAN**, Dept. 588. "Space shuttle payload sensitivities."

KENYON—R. E., Dept. 589. "Discussion of trade study cost estimation methods."

Papers presented at the AFML, AIAA, AOA, SAMPE joint meeting, Miami Beach, Fla., May 18-22.

FOREST—J. D., Dept. 512. "Space vehicle applications of advanced composite materials."

PRUNTY — J., Dept. 512. "Thermostructural design options using contemporary materials."

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

NASA Signs Go Ahead

(Continued from Page 1)

shuttle and space tug vehicles by Newell.

Convair's representatives will spend the next week visiting European industrial firms for discussions on how their capabilities could be used during Phase B and later space shuttle activities.

The three Convair men will be at the Messerschmitt-Boelkow-Blohm plant in Munich tomorrow (July 9) and at the Vereinigte Flugtechnische Werks in Bremen the following day.

After flying to London, visits will be made to the Hawker-Siddley plant in Stevenage this Saturday, to British Aircraft Corp. facilities in Weybridge and Filton on July 14 and 15, and to the Rolls Royce plant in Derby the 16th. A trip to the Dassault plant in Paris will complete the schedule July 17.

Dick Keehn, Convair director of engineering-space shuttle, is at Kennedy Space Flight Center today to brief NASA and Convair personnel there on the division's space shuttle program.

Liebreich Attends War College Seminar

Oscar P. Liebreich, a launch vehicle programs budget coordinator in Convair's Dept. 954-1 and a lieutenant colonel in the U.S. Army Reserve, recently attended a two-week defense strategy seminar at the National War College in Washington.

Liebreich was one of 250 senior officers from the Army, Air Force, Navy, and Marine Corps Reserves and National Guard chosen to attend the seminar this year.

Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, July 25. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. No canvas or open-toed shoes and no bare feet.

'In-Plant College' Graduates 23

Twenty-three men who have attended in-plant San Diego Evening College industrial supervision courses at Convair were awarded degrees and certificates in special ceremonies at a recognition dinner for themselves and their wives June 22 on the Reuben E. Lee floating restaurant.

Roger Wallace of Convair's Dept. 170-1 and Peter Torres of Dept. 833-1 received Associate in Arts degrees in industrial supervision from Dr. Robert Hamilton, president of the San Diego Evening College. Wallace had the highest grade point average of 338 students in the Evening College graduating class.

Convair personnel awarded Certificates of Proficiency by William Steinberg, director of vocational education for the San Diego Community Colleges, were Robert Came, Fred Campos, George Carroll, Lewis Chapman, Charles Cook, David Dudbridge, Edward Ford, David Galloway, Fred Hagen, Stanley Jachimowicz, Linwood Lee, James Lemon, Don Maguire, Marian Smolka, Conrad Snyder, Dean Weelborg, and Lynn William.

Also receiving certificates were Robert Francella of C. H. Tripp Co. and Ernest Horvarth, Joseph Silva, and Jerry Van Wey, all of Solar division of International Harvester.

The Certificate of Proficiency in Industrial Supervision is awarded for successful completion of 10 three-unit courses from the supervision curriculum. The AA degree requires additional studies totaling 60 units of college credit.

Dr. Hamilton said San Diego Evening College had 11,500 students during the spring semester and, because of the unique needs of the aerospace industry and the community it serves, is considerably different from other evening colleges throughout the state.

Steinberg said bringing education to industry is not new "but it is unique when the entire educational program is conducted on the industry's grounds" as it is at Convair.

Eugene Fox, Convair manager of compensation, told those being honored the fact that most of them had spent more than 1,000 hours of off-duty time in study —in addition to working eight hours a day—shows they are anxious to upgrade themselves.

"You and your families deserve hearty congratulations," he said.

Fox told the honorees their educational achievement and increased knowledge of management skills will help make experiences on the job more rewarding and improve their opportunity for promotion.

Jack Croft, chief of educational services, was among Convair hosts for the recognition dinner. Hal Rubin, coordinator for the Evening College in-plant program, was master of ceremonies.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

Outstanding Students Honored As 15 Earn Graduate Degrees

Two Convair division men recently received awards as outstanding students in two graduate-degree programs at United States International University.

William E. Barbic of Dept. 195-1, first USIU student ever to earn a master's in business administration with a 4.0 (straight A) grade point average, received the Wall Street Journal award medallion as best student in the MBA program.

Billy E. McGrew of Dept. 986-6 received a Convair-sponsored award plaque and Harvard Business Review subscription as most outstanding graduate in the Master of Science in Management Science (MSMS) program. This marked the second consecutive year for a Convair employe to be selected for the division-sponsored award.

Dr. Andrew J. Papageorge, acting dean of the USIU school of business administration, presented the awards and accompanying congratulatory letters to Barbic and McGrew at an informal ceremony June 25 in the Kearny Mesa plant.

Fifteen Convair men were awarded MSMS degrees in USIU graduation ceremonies June 7 in the San Diego Civic Theatre after completing nine required graduate courses in management science in-plant and at the USIU Elliott campus.

In addition to McGrew, they were Larry Bay, Dept. 553-1; Bob Carlquist, 145-2; Bob Cox, 532-1; Jerry Hemme, 967-9; Mike Hurley, 585-0; Dick Kowalczyk, 574-3; Dwight Little, 589-2; Duane Mealey, 542-0; Don Mofat, 543-2; Larry Nelson, 952-5; Dave Ramsey, 574-3; Jerry Sasek, 520-1; Al Walburn, 584-0; and Joe Zintel, 780-3.

David Chigos, coordinator of the program for educational services Dept. 130-3, said 22 other students in the program are scheduled to earn their MSMS degrees at the end of the summer quarter.

The MSMS program was instituted for selected Convair engineering and other technically-trained personnel in 1968. Four courses were held in-plant and the remainder at the Elliott campus.

Chigos said there have been no student dropouts due to academic failure in the program.

Fire Dept.'s Clean-up Campaign Best Industrial Effort in City

Convair division's fire department won the first place trophy for best industry program in the 1970 Fire Safety and Anti-Litter Days contest sponsored by the San Diego Chamber of Commerce and the War Against Litter Committee.

Convair Fire Marshal Hugh Rae directed the fire safety and plant clean-up efforts.

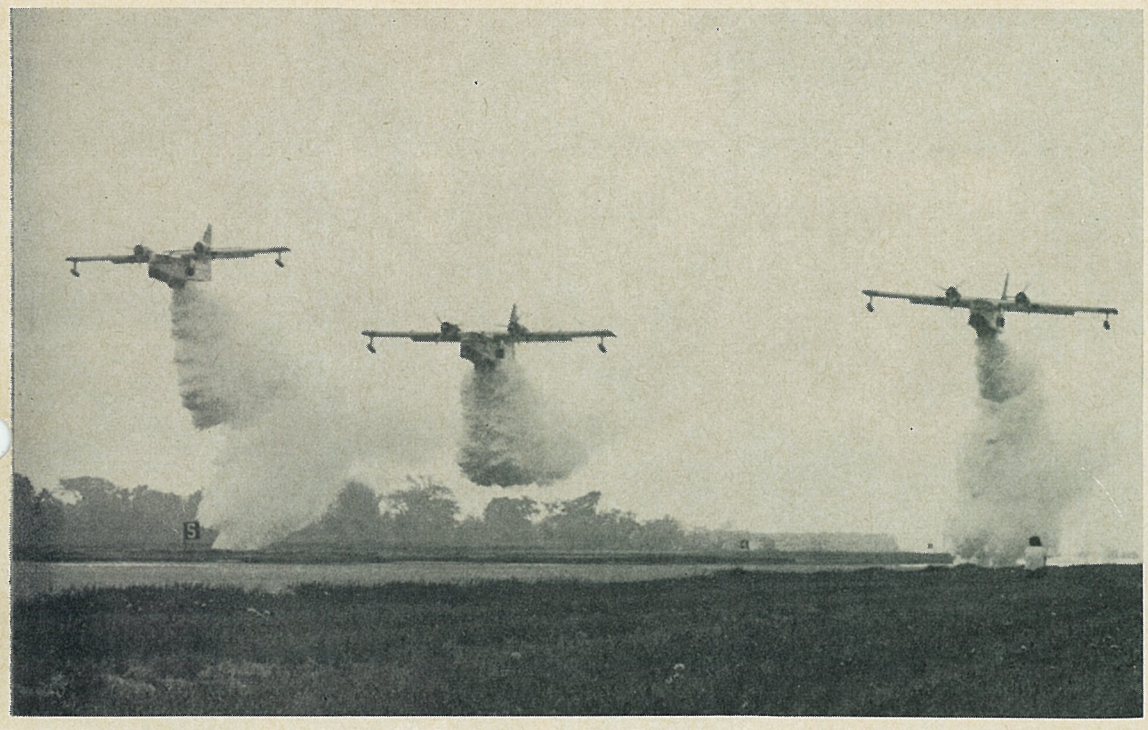
The award was based on a scrapbook outlining the division's participation that included before and after clean-up photos.

"We believe a clean plant is a fire-safe plant—and we work to keep it that way," D. D. Dimmitt, chief of fire and safety, said.

"During the contest, our firemen devoted many off-duty hours to clean up littered vacant lots near our plants."

Contest awards were presented June 17 at a luncheon at the Hanalei Hotel by Deputy Mayor Allen Hitch, Ivor DeKirby of the Chamber of Commerce, and Mrs. Nell Carpenter of the War Against Litter Commitee.

TOP TROPHY—Convair firemen admire first-place trophy garnered for best industry program in recent countywide fire safety and anti-litter contest. From left are John O'Toole, Chuck Boutt, Ben Diffenbaugh, Fire Marshal H. W. Rae who directed campaign, Ralph McConnell, J. A. Birdsong, P. M. Houtkooper, and Capt. Robert Purdy.



LOOK OUT BELOW!—"Le Service De la Protection Civile Francaise" took delivery of its tenth and final CL-215 water bomber from Canadair Limited, designers and builders of the amphibious aircraft, in ceremony preceded by three-plane demonstration of water bombing in which the three CL-215s dropped a total of 3,600 gallons of water. Province of Quebec will soon receive first of its 15 CL-215s.

Mgt. Assn. Officers Meet in New York For Discussion of Mutual Policies

Top officers of eight General Dynamics Management Associations gathered at New York Headquarters last month for the sixth annual meeting of new and outgoing presidents.

The annual conference is financed jointly by the local division/subsidiary organizations participating. Represented were Convair, Electric Boat, Electronics-Rochester, Dynatronics, Fort Worth, Pomona, Quincy and Stromberg-Carlson.

Algie A. Hendrix, Corporate vice president, greeted the group, stressing the importance of association activities to individual members, to the various division/subsidiaries and to the Corporation. He pointed out that the organizations can make a major contribution to overall Corporate goals, furthering development of management teams, contributing to improving business competitiveness by adding to quality, schedule performance and profit improvement, and by enlarging the Corporate image through relations with customer and community.

Hendrix congratulated the Fort Worth Association on its selection as the top association of the nation, and called attention to the records of Convair and Vandenberg the previous year.

Arch Rambeau, Corporate Headquarters, and Eric McCartney, NMA vice president, described NMA national policy services.

SIXTH ANNUAL—Shown during Management Association conference at New York City are, standing from left: Jack Whiting, Electronics-Rochester; Jess Cook and Herb Day, Convair; Tom Edwards, Electric Boat; Henry Carducci, Electronics-Rochester; Tom O'Donnell, Stromberg-Carlson; Lou Campese, Dynatronics; Larry Mahoney, Quincy; Arch Rambeau, Corporate Headquarters. Seated, from left: Eric McCartney, NMA; Bob Smith, Electric Boat; Bryan Murphy, Fort Worth; Lloyd Dorsey and Don Calkins, Pomona; Chuck Middleton, Fort Worth.

Testing of New Materials Included In Advanced Composites Contracts

Two contracts for development of advanced composite structures —one related to missile and space hardware and the other to aircraft structures — have been awarded Convair division by the Air Force.

Both contracts were awarded by the Advanced Composites Division of the Air Force Materials Laboratory, Wright-Patterson Air Force Base, Ohio.

The contract to fabricate experimental missile and space structures will be coordinated with the Air Force Systems Command's Space and Missile Systems Organization. It will include the fabrication and structural test of a truss, spacer and adapter that mount Air Force payloads atop space boosters.

The contract also provides for extensive testing of new materials for mechanical and physical properties under a wide range of environmental extremes, and the preparation of a comprehensive design guide for the application of advanced composite materials to missile and space structures.

Materials involved include graphite and boron filaments of high strength and stiffness embedded in both plastic and metallic binders.

The contract is valued at approximately $1.5 million and will run for a two-year period.

The second contract, involving aircraft structural elements, will emphasize improved metal-matrix fabrication techniques. Shapes such as hat sections and I-beams will be produced through tape consolidation methods of isostatic pressing and braze bonding.

Simultaneously, fabrication development in forming, welding, mechanical fastening, brazing and machining will be conducted to provide improved cutting and assembly methods.

A systems analysis to determine raw material optimum forms will also be conducted.

This contract is valued at approximately $180,000 and runs for 12 months.

Communication System Developed For Speedy Reaction in Emergency

A computer-controlled communication system that will enable police and firemen to react to emergencies faster was described recently by General Dynamics personnel before law enforcement and other public officials at Rochester, N. Y.

The system, developed at Electronics division, will immediately identify the source of calls to emergency 911 telephone numbers. It then will automatically transfer the incoming call to the police dispatcher for the caller's district and supply, on a video display, information such as the address of the telephone, the subscriber's name and the nearest available police car.

After determining the nature of the emergency and verifying the displayed information, the answering officer would dispatch a police car if the situation warranted.

Other emergency calls would be transferred to the fire department, ambulance service or poison control center along with pertinent video information. In the case of fire, this information would include the type of dwelling, the number of occupants and the nearest fire company.

The plan was outlined at a meeting of the Genesee-Finger Lakes Regional Planning Board as a new generation 911 system. The 911 system has been placed in service by many communities throughout the nation to provide the public with a common telephone number to call in any emergency. Current systems do not immediately identify the source of calls nor automatically transfer to the appropriate dispatcher.

"The new concept," Dr. Louis V. Surgent, manager of civil systems technology for General Dynamics' Electronics division's research department, said, "will improve police, fire and other emergency services and will enable 911 to be used on an all-emergency, regional basis even where the services are independent organizationally and where regional consolidation is being undertaken on a gradual basis."

"Besides providing this flexibility to accommodate local organization," Dr. Surgent said, "the system will reduce the time needed to respond, eliminate confusions caused by similar street names in a region, reduce false alarms and facilitate record keeping."

Identification of incoming calls on 911 would use circuitry similar to that employed today in long distance toll calling. The idea of applying this technology to emergency dispatch systems was developed by Alfred La Beouf, research staff member at the company's Electronics division. To assure feasibility of the idea in modern telephone systems throughout the country, La Beouf worked with Stromberg-Carlson, a General Dynamics' subsidiary, which manufactures equipment for the telephone industry.

Systems and hardware would have to be designed to meet local requirements. The telephone system modifications required are likely to be extensive, particularly if the program includes free 911 dialing from coin boxes to bring improved services to accident victims on highways and to inner-city residents.

"The concept for the overall system," Dr. Surgent said, "includes installation of car printers in vehicles to reduce voice communications and to improve security. Computer-controlled maps would facilitate job assignments and pave the way for car-locators when these become available. Since all information would be in computer memory, central and district headquarters personnel could have access to it at any time or in summary form at the end of shifts."

General Dynamics manufactures communications systems for the Department of Defense and other governmental agencies and has conducted studies of various cities' emergency communications and data systems.

Yokohama Firm Will Produce Convair Buoys

Matsushita Communication Industrial Co. Ltd. of Yokohama, Japan, has been licensed by General Dynamics to manufacture and sell Convair division-designed and developed ocean data stations and large navigation buoys in selected areas of the Far East.

Under the agreement, Convair will provide Matsushita with technical data and know-how for building, outfitting, and marketing of the buoy systems.

Matsushita is licensed to market the buoy systems only for use in the territorial waters of Japan, South Korea, Taiwan, Hong Kong, the Philippines, Thailand, Indonesia, Malaysia, and Singapore.

One of Japan's major companies, Matsushita has divisions producing television sets, radios and stereos, recording instruments, electronic components, batteries, home appliances, kitchen equipment, electric motors, refrigeration units, and industrial apparatus.

Three Matsushita representatives were at Convair's Kearny Mesa plant last Thursday (July 2) for a series of briefings on the division's ocean data station program and related activities.

They were Akisado Ogama, director of Matsushita's telecommunication division; Morimi Wanami, a project engineer; and Akimi Fujiki, a marketing representative from C. Itoh and Co.

The three were welcomed by Jack L. Bowers, Convair division president, and were briefed on General Dynamics and Convair organization and product lines by E. J. Hopley, director of new product development.

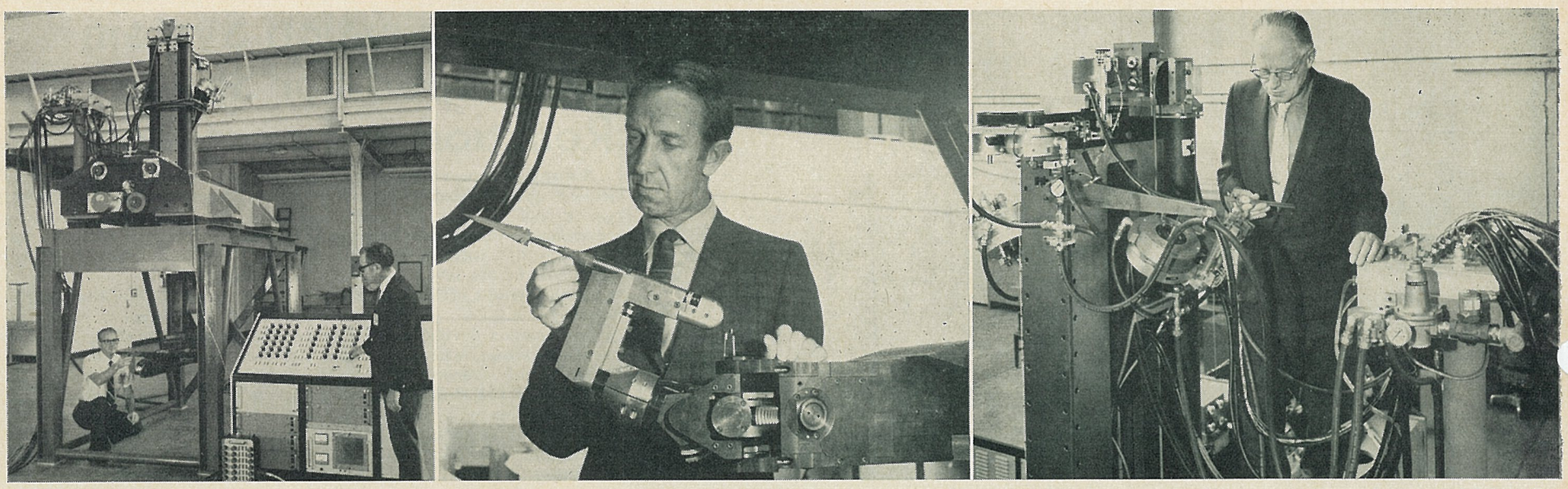
Roy Woodle, project manager for national data buoy systems, summarized Convair's work in development of ocean data stations.

E. R. Gauthier, marine systems group engineer, described elements of ocean data and ocean navigation systems and outlined a proposed technical exchange program. J. W. Petre, chief requirements engineer, discussed program development and marketing.

The Japanese visitors saw a 30-minute Convair-produced ocean data station film, had lunch with division executives, and were given an escorted tour of the Kearny Mesa plant.

Convair buoys have a hull 40 feet in diameter and 7½ feet deep and can operate for months without maintenance under severe weather conditions—including in hurricanes and typhoons.

When telephoning, never mind the weather. Get to the point. Telephone time costs money.



READY TO SHIP—In photo at left Sam Pountney (left) checks position of strain gage missile model on nose of captive trajectory support while Bill Arnold checks out digital controls. Both are senior engineers in Convair wind tunnel. In center photo, Stan Griffin, wind tunnel group engineer, examines missile model installation. At right, captive trajectory system designer Irvin Olson, senior engineer, completes final inspection before shipment to NSRDC, Washington, D.C.

Second Contract Extension Awarded For NASA Project

A Convair division study team has developed and laboratory tested analytical mathematical formulae for six different types of gravity-sensitive phenomena that may be encountered in typical life support systems of the near-term future.

NASA's Langley Research Center recently awarded a $72,000 second major extension to the contract for eight months of additional study to further define experiments needed to test validity of the analytical "models" and to determine which may be performed in tower and balloon drops; in C-135 aircraft and rocket flights; aboard Skylab B, a manned orbital space station scheduled in the 1974-75 time period; and in unmanned space experimental modules.

Experiments defined in the recently completed Mod 1 21-month study are listed in the NASA "Blue Book" as candidates for use in space stations and have NASA space and budget allocations for Skylab B.

John Burnett of Dept. 592-0 is project leader; Evan Evans, Robert Bradshaw, Kit Burton, and Dr. Dennis Heppner have provided analytical model development and evaluation; and George Wood and Fred Rivinius have handled experiment test.

The six types of space phenomena for which mathematical equations have been developed are grouped under the titles of nucleate boiling, diffusion convection, film stability and transport, inertial separation, convection heat transport, and flow regime characteristics.

Studies previously conducted by various Convair functions, particularly thermodynamics and life sciences, led to development of the formulae.

Burnett said a set of graphically displayed parametric data also was developed which, as far as possible, relates phenomenological process characteristics to equipment design variables to "help bridge the gap between the mathematical models and life support systems designers."

Bubble dynamics and energetics-agglomeration, wake effects, container interactions, gravity field effects, bubble geometry, and fluid characteristics were studied in the nucleate boiling experiments. Differential equations, numerically solved, were developed to describe the complex interactions of bubble motion.

Diffusion of a second component in a carrier gas was studied and mathematically described in the diffusion convection study. Characteristics of thin liquid layers during transport along a flat surface by gas stream shear forces were examined and related differential and algebraic equations developed in the film stability and transport study.

Motion of a thin liquid layer which uniformly wets the wall of a conical surface also was defined in a combination of differential and algebraic equations.

Behavior of a liquid droplet upon impact with a hydrophobic screen and the process of separation of components of two-phase media in a cyclonic flow path with outflow of the liquid along a conical surface were studied in the two inertial separation cases.

In the convection heat transport study, equations were developed to describe the stable/unstable boundary. Influence of temperature, stream velocity, and the inertial field on convection phenomena in a fluid stream were studied.

Physical and dynamic aspects of two-phase flow characteristics were studied and described and a series of equations were formulated relative to such transport parameters as inertia, turbulence, and eddy diffusion.

The current study phase will result in preliminary designs for the low-gravity experiment "packages" and a program plan for their development and deployment.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

(Continued from Page 1)

Q—Our safety record is far from being as good as it could be and I'd like to see us recognize that safety and housekeeping go hand in hand and tighten down on housekeeping inspections.

A—There has been a concerted drive for better housekeeping since your letter was written and conditions have improved greatly. Recent actions include: additional cigarette disposal cans; additional eating areas with closer housekeeping surveillance; elimination of combustible containers for storing rags; improved pickup of waste containers and relocation of trash pickup points; daily housekeeping inspection, etc.

Hardison Named To Commission

James M. Hardison, a publications editor in Convair division's Dept. 515-0 has been appointed to the Commission of the Californias by Lt. Gov. Ed Reinecke.

J. M. Hardison

The commission, headed by Gov. Ronald Reagan, is composed of governmental and civic representatives from California, Baja California, and the Territory of Baja California Sur.

Its purpose is to promote mutual assistance and advance social, economic, and cultural development through better utilization of technical, cultural, and economic resources in the three Californias.

Major committees are working on problems and programs in agriculture and fishing, cultural and social affairs, economic affairs, tourism, and drug abuse.

Hardison, a 19-year Convair employe and son of a former U.S. government Point 4 program director to Mexico, has been appointed to the cultural and social affairs committee and will attend his first meeting of the commission next week (July 16 and 17) in San Francisco.

Hardison has taught evening school Spanish courses in San Diego 11 years, has a weekly Spanish column in four area newspapers, and owns and operates a tourist train service between Mexicali and Mexico City. He previously conducted CRA Mexico tours for several years.

After recently receiving a master's degree in history from USD, he now is working toward a doctorate in leadership and human behavior at USIU.

You Can Become Regular Bond Buyer For 50 Cents a Week

Trajectory Test System Slated For Use in Shuttle Studies

A captive trajectory system fabricated under a $225,000 Navy contract has been shipped by Convair division to the Naval Ship Research and Development Center, Washington, D.C.

The Convair-developed system, designed for use in both high and low speed wind tunnels, was shipped in late June via a special air cushioned truck to the Naval transonic wind tunnel.

Sam Pountney, senior engineer-mechanical, and Bill Arnold, senior engineer-electronic, of Convair's wind tunnel group, will be in Washington this month during installation, initial checkout, and acceptance. Naval officials indicate that testing is scheduled to begin in September.

Stan Griffin, wind tunnel group engineer, said the captive trajectory support system originally designed to analyze trajectory of missiles, bombs, and stores in the presence of external flow, will now be used to analyze separation of booster and orbiter in the space shuttle program.

A computer combines force data from a strain gage balance within the missile model with missile or vehicle dynamic characteristics information such as mass, moment of inertia, rocket thrust, altitude and other data to compute the resultant trajectory.

The captive trajectory system offers a method of simulating store or vehicle separation in a wind tunnel. The simulation permits six degrees of freedom: vertical, horizontal, axial, pitch, yaw and roll, the dynamic and propulsion characteristics of the store or vehicle itself, and the variation of such parameters as Mach number, ejection forces, altitude, and relative store locations.

In addition to the system just delivered to the Navy, a prototype was put into operation in August, 1965, at the Convair high speed wind tunnel and in October, 1967, Convair delivered another to the Air Force for use at Arnold Engineering Development Center, Tullahoma, Tenn. Only two or three similar systems are installed in wind tunnels throughout the country.

Irvin Olson, senior design engineer, of the low speed wind tunnel's mode design group, was responsible for structural/mechanical design. Ed Yager, wind tunnel group engineer, was responsible for the electronic controls system.

Olson stated that he was working on a new design to improve the Convair system's capabilities that will increase testing loads from 80 lbs. to nearly 500 lbs. to accomplish more diversified testing in the space shuttle program.

The electronic installation was done at the Lindbergh Field plant by low speed wind tunnel technicians with the steel structure and mechanical portions built by Mechanical Specialties, a Los Angeles firm.

Engineering Project Based on Dad's Book

Arnold McKinley, son of James McKinley, Electronics - SD technician in Dept. 724, recently presented his senior engineering project entitled "A Study of the Resonant-Energy Quantum Theory" at Loyola University in Los Angeles.

His project was based on a book written by his father, "Introduction to Coherent Resonant-Energy Quantum Theory," which resulted from nine years of research and experimentation.

Young McKinley will receive a BSEE degree from the university in December.

Convair Group On ASTD Panel

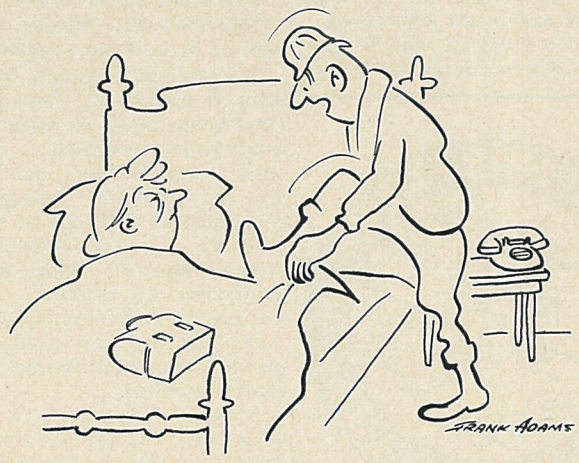
Five from Convair, enrolled in four different types of division-sponsored educational programs, served as panelists for a program at a luncheon meeting of the San Diego chapter of the American Society for Training and Development.

Participants and programs represented were Richard Keehn, director of engineering-space shuttle, Master of Science in Management Science; Stan Sharp, manager of industrial security, Masters in Human Behavior; Roger Wallace, supervisor of data systems, and Carol Owens, Dept. 170-1 computer operator, baccalaureate degrees; and Lynn William, Dept. 001 machine shop foreman, Associate in Arts Industrial Supervision.

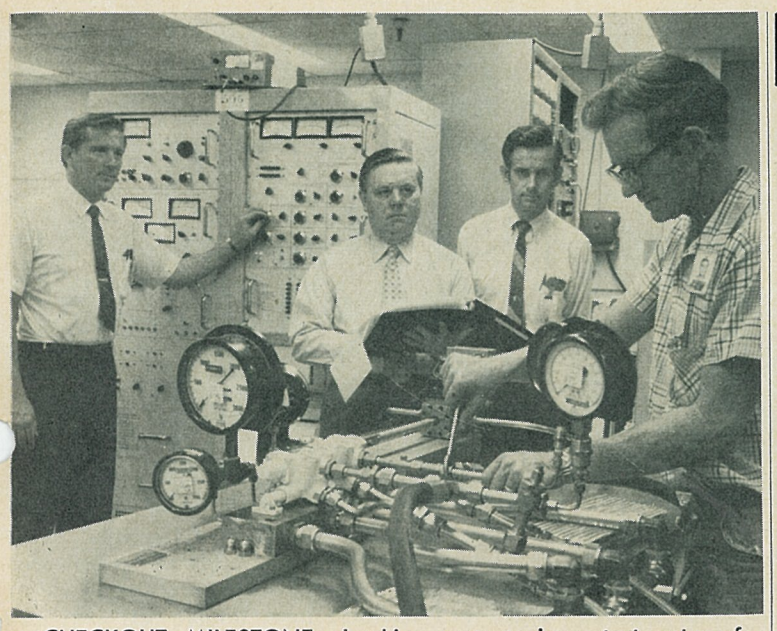
Each described his program, made informal comments on how knowledge gained may be used in his or her type of work, and answered questions from the audience.

David Chigos of Convair's educational services section was moderator. Jack Croft, chief of educational services, is president of the ASTD chapter.

The meeting was attended by training directors from federal and local government, military, industrial, business, and educational organizations in the San Diego area.



". . . missed th' bus."



CHECKOUT MILESTONE—Looking over unique test setup for F-111 hydraulic components in Convair division engineering test lab as James Reynolds, engineering test mechanic, completes connection are, from left, Don Stenger, Convair test conductor; Ed Eberhart, servo tester from Sacramento Air Materiel Area; and Glenn Gilcrest, Fort Worth division senior design engineer. F-111 AGERD test console in background was connected electronically to hydraulic test equipment for series of tests.

AGERD Tester Set Evaluated In Unique Hydraulic Hook-up

An F-111 aerospace ground equipment requirements data (AGERD) tester set has been connected electronically to a complex hydraulic test setup in a Convair test lab for a series of engineering evaluation tests.

Don Stenger of Convair's Dept. 578-0, the test conductor, said the system—in addition to proving out the AGERD unit—was used to test F-111 hydraulic rudder servoactuators, horizontal tail servoactuators, spoiler actuators, and wing-sweep servovalves.

On hand to assist with the unique test setup was Glenn Gilcrest, a Fort Worth division design engineer, and Ed Eberhart, servotester for the Sacramento Air Materiel Area (SMAMA).

Fort Worth division provided specifications for the test setup and several major pieces of required equipment were fabricated at Convair.

The AGERD tester unit, supplied as vendor equipment, provided electronic measurement of a series of functional tests with results being plotted by a recorder.

Stenger said the test equipment after completion of the engineering evaluation, is to be delivered to SMAMA for future use there.

Wives Club Awards Scholars $250 Each for College Help

Convair Wives Club has awarded $250 scholarships to three outstanding high school graduates who are children of division employes.

Receiving the scholarship checks, made to the college they plan to attend in their behalf, were Charlene Lee Herring, daughter of William E. Herring, a Dept. 144-1 group engineer; Rolfe D. Moore, son of Willie E. Moore, a Dept. 541-0 engineer; and David McGlone, son of William E. McGlone, a Dept. 046-0 aircraft assembler.

Miss Herring plans to attend UCSD. She is a Clairemont High graduate where she was a Governor's Scholar, a National Merit Scholarship semi-finalist, a life member in the California Scholarship Federation, and received departmental honors in biology and math.

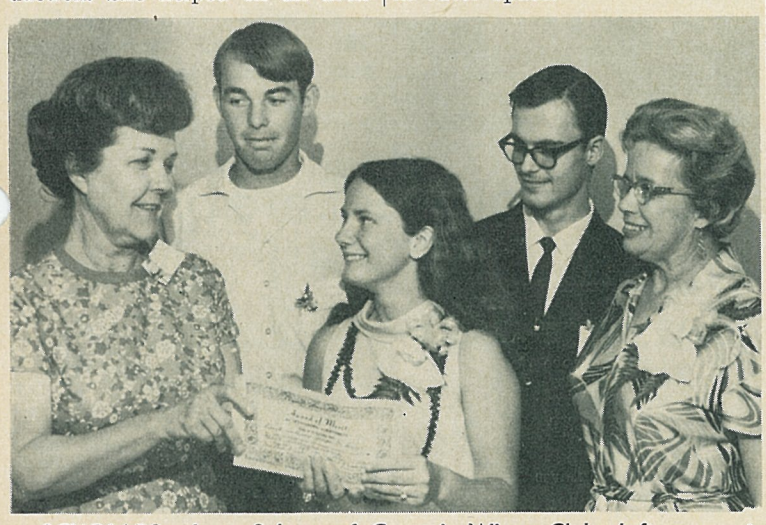
She served on her junior and senior class councils and was assistant director of a drama production. She helped on an archeological excavation project last summer at Presidio Park as a member of a Young Historians club.

Moore, a Helix High graduate and a member of the winning team in the recent Convair-San Diego State College honors math contest, plans to study electrical engineering at San Diego State.

He also is a life member of CSF and a Governor's Scholar, was a tartan bearer and a member of his school track team, won the DeWitt Bisbee Memorial scholarship, and in his spare time is a private pilot and little league umpire.

McGlone, a graduate of Hoover High where he was a member of the science and Latin clubs and a National Merit semi-finalist, plans to major in astronomy at San Diego State.

Astronomy, laser holography, and science fiction are his hobbies. He has written and illustrated a book on what he imagines life might be like on a planet in outer space.



SCHOLARS—Inez Schurr of Convair Wives Club, left, presents certificate and $250 college scholarship check to Charlene Herring as Mrs. Helen Ellsworth, club president, looks on at right. Also receiving $250 scholarships were Rolf Moore, second from left, and David McGlone.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 KM. Deadline for next issue of GD/NEWS is July 14. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

ADVENTURERS—Meeting, 7:30 p.m., July 15.

BADMINTON—Play 7-10 p.m., Mondays, Federal Bldg., Balboa Park.

BRIDGE — Duplicate bridge sessions, 7:30 p.m., each Friday.

CAMERA CLUB—Meeting 7:30 p.m., July 19. Bikini Model Shoot, bring camera, film and equipment.

CERAMICS—Meet Tuesdays and Thursdays, 9 a.m.-noon and 7-10 p.m.

CHESS—Play 7 p.m., July 15.

CHORUS—Rehearsals 7:30 p.m., Mondays.

COINEERS—Meet 7:30 p.m., July 13.

COUNTRY & WESTERN MUSIC — Meet 7:30 p.m. Thursdays, CRA Missile Park picnic shelter.

DELTA DIVERS—Meet tonight (July 8), 7:30 p.m.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GOLF—Rancho Bernardo tourney, July 18-19, 7:30 a.m. tee-off. Call KM ext. 1111 beginning July 9 for tee times.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m., Monday through Thursday; 9:30 a.m. to 9 p.m., Fridays; 10 a.m. to 5 p.m., Saturdays; "Women only" weekdays, 9:30 to 11 a.m.

HI-FI MUSIC—Meeting 7:30 p.m., July 14.

ICE SKATING—GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1 (includes skates).

JUNIOR SCIENCE — Meeting 7:30 p.m., July 17.

MINIATURE RAILROAD—Operating sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Wednesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Shoot 9:15 a.m., July 12, Police Pistol Range, Federal Blvd. & Home Ave.

RIFLE CLUB—Senior shoot 7 p.m., tonight (July 8). Junior shoot 9 a.m., July 18. Gillespie Field Range.

ROCKHOUNDS—Workshop open Tuesday nights, 7-9 p.m. and Saturday and Sunday, 1-4 p.m.

SCULPTURE — Workshop sessions, 7:30-10:30 p.m., Mondays.

SPORTS CAR CLUB — Meeting 7:30 p.m., tonight (July 8).

SQUARE DANCE — Dance Thursdays, 8-10 p.m.

STAMP CLUB—Meeting 7:30 p.m., July 9.

SWIMMING—GD family swim night 7-9 p.m., July 18. Tickets at employe benefits outlets, 5 cents.

TOASTMASTERS—Convair Toastmasters meet each Wednesday, 4:30 p.m. Dynamic Toastmasters meet Thursdays, 5:30 p.m.

TRAIL BIKE CLUB — Meeting 7:30 p.m., July 9.

TROPICAL FISH—Meeting and workshop 7:30 p.m., July 20.

WOMEN'S GOLF—Chula Vista tourney, July 11, tee-off time 11 a.m.

Orbiter Photo Volume Available

"The Moon as Viewed by Lunar Oribter," a 152-page NASA book of photos providing almost complete coverage of the lunar surface, now is available at $7.75 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

In addition to conventional photos, each contains four full-page stereoscopic pictures. This gives the reader, using special glasses provided with each volume, a look into lunar craters and valleys.

Convair division's Atlas SLV-3s 5801 through 5805 were boosters for the five Lunar Orbiter spacecraft which photographed the moon and "paved the way" for Apollo manned lunar landings.

Electronics Bridge Teams Win Honors

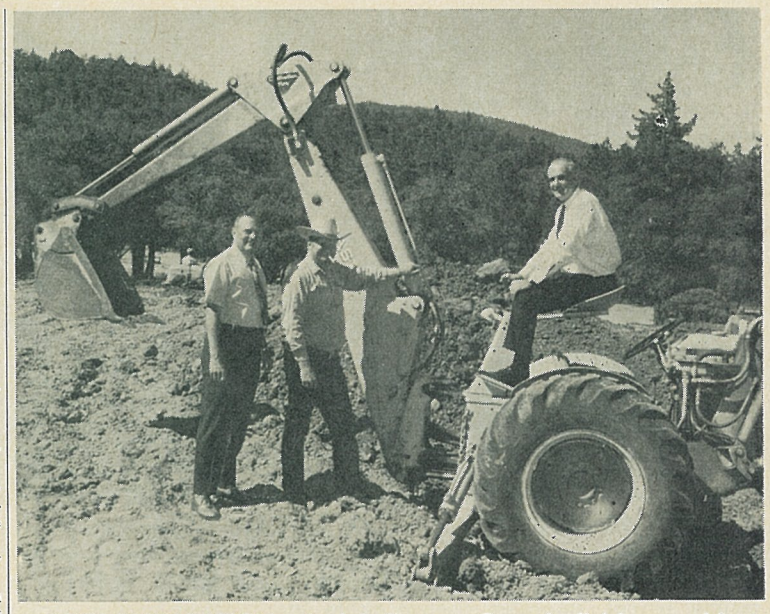
Two, five-member Electronics-SD bridge teams won honors in the recent 10-game spring series in San Diego Industrial Bridge Club duplicate play, sponsored by the San Diego Industrial Recreation Council.

First place laurels went to the team of David and Pauline Oakley and Mits and Sally Ishihara and substitute Gordon Blade.

Fourth place winners were Casey Jones, Ed Lou, Bill Hatherly, Don Kerr, and substitute Darryl Thornburg.

Tickets on Sale For 'Greatest Show'

Tickets for the 8 p.m. July 15 performance of the Ringling Brothers, Barnum and Bailey Circus, the "greatest show on earth," are on sale for $4, $3, and $2 (a $1 saving for each) at all CRA and employe benefits outlets. Location will be the San Diego Sports Arena.



POOL PREPARATION—Jack L. Bowers, Convair division president, right, looks over site for swimming pool at CRA Pinecrest Park with M. V. Wisdom, left, director of industrial relations, and B. E. "Red" Hill, manager of Pinecrest Park. Pool and adjoining bathhouse should be ready by end of summer.

Swimming Pool Planned at Park

Ground has been broken for a 75 by 42-foot heated swimming pool with an adjoining bathhouse at Convair Recreation Association's 90-acre Pinecrest Park in the Cuyamaca Mountains.

The pool will be ready for use by the end of summer. It will have 3 to 9½-foot depths with two diving boards and a concrete deck for sunbathing. A separate circular wading pool will be included for small children.

"Pinecrest is being developed into a prime recreation area for Convair division employes and their families," Paul Allgire, chief of employe benefits, said. "Construction of a swimming pool is a natural adjunct to the camping, hiking, and picnicking activities at our mountain recreation area."

Pinecrest is on Highway 79, three miles south of Julian and opposite Inspiration Point. The number of employes with their dependents and guests who used Pinecrest Park during the past year exceeded 25,000.

Campsites are available at $1 per night for families with campers, trailers, or tents.

George Schmiedel, supervisor of recreation, said five camping trailers now are available for overnight rental. The charge for trailers sleeping a family of eight is $6 and for those sleeping a family of six is $5.

Reservations for the trailers are taken at CRA Clubhouse, ext. 1111 KM, the first of each month for the following month (July 1 for the month of August).

Employe trailer parking in the park storage lot is available at $4 per month plus the regular $1 overnight camping fee for a minimum of two nights per month.

Linkswomen to Face Chula Vista Course

General Dynamics Women's Golf Club will challenge the Chula Vista Municipal course Saturday, July 11, with tee off time set for 11 a.m.

Evie McFall won the Ernie Paul Memorial Trophy for low gross score in the annual tourney held June 13 over the Mission Bay links. In handicap play, Dorothy Johnston with net 54 took first and Joan Sjoblom was runner-up two shots back. Mable Humphries took third.

All General Dynamics linkswomen and dependents are eligible for club play. For further information call Freda Magargal, ext. 2933 KM.

CRA Offers Wide Range in Travel

Following are highlights from CRA's 1970 travel program:

Europe — Two weeks from $445, three weeks from $619; includes air travel, hotels, transfers, sightseeing, escort service, most meals; many departure dates.

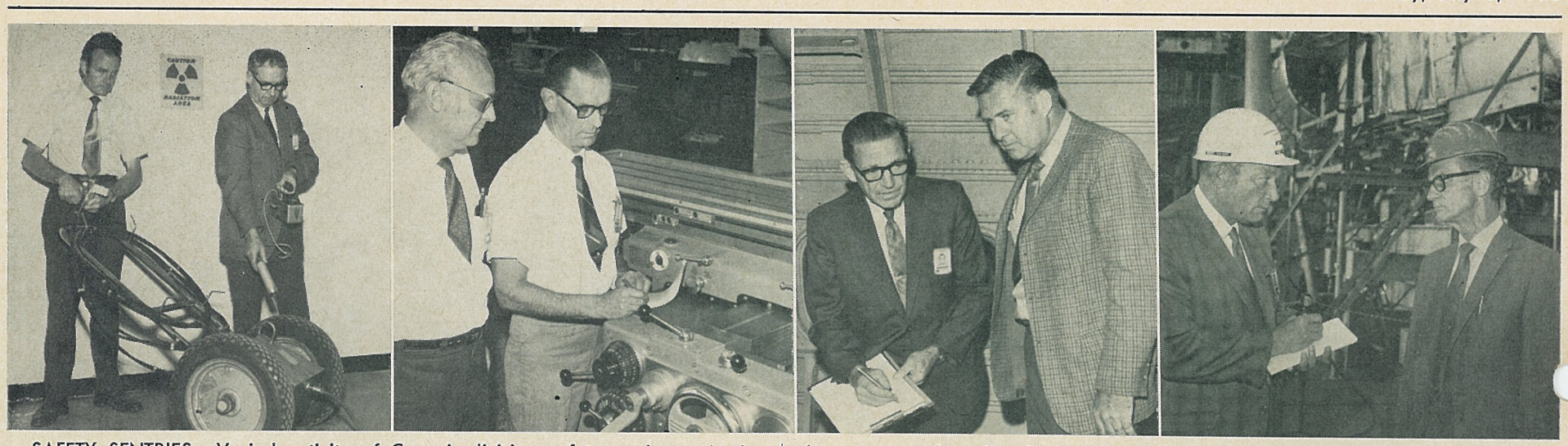
Tahiti—Two weeks, $680; includes air travel, hotels, transfers, sightseeing, all meals; many departure dates.

Mexico — Special Christmas tour, two weeks, $395; includes air travel, hotels, transfers, baggage, tips, sightseeing, most meals, escort service; departs Dec. 19.

Mulege — Fishing package, four days and three nights, $180; includes air travel, hotels, transfers, all meals, two days fishing; departures all year.

A travel meeting for discussion of all programs is scheduled at 7:30 p.m. tomorrow (July 9) in the CRA Clubhouse, Room C.

VOLLEY CHAMPS—Members of The Reivers, team that took CRA plant volleyball league championship by defeating GASP in two straight playoff tiffs, display their trophies. From left are Don Boyer, Bob Eilers, Hank Pallulat, Jerry Cox, Ken Hazelwood, and Al Taschner. Ernie Morey was not present for picture.



SAFETY SENTRIES—Varied activity of Convair division safety engineers is depicted in photos. From left, Len Breen uses geiger counter to verify return of Cobalt 60 isotope to storage position as Ed Martindale, left, an instructor in non-destructive testing school, operates control cable for "camera"; Sam Galasso signs safety section acceptance of new milling machine as Stanley Penzuil, left, machine shop foreman, watches; Jim Cooper chats with C. J. Eskew of Dept. 046, right, about various aspects of safety in DC-10 fuselage fabrication; Dick Schulz confers with Oscar Bell, right, group foreman at Harbor Drive facility, about oustanding safety program and potential hazards there. F-111 airframe static fatigue test setup can be seen behind Schulz and Bell.

More Than 1,200 Briefed With Emphasis on Safety

More than 1,200 Convair hourly production department men and women have attended recent safety presentations conducted by Del Dimmitt, chief of fire and safety, and Dick Schulz, senior safety engineer.

Thousands of others will be called in for similar presentations during the second half of the year.

"We talk about management's concern for each employe's safety, the effort being expended to provide safe work conditions, and some of the causes and ways to prevent accidents on the job," Dimmitt said.

"We haven't had a fatal accident at Convair for six years—and we're doing our utmost to see that we never have one."

The safety presentations open with a filmed comedy skit on safety and those attending later are admonished to "be sure to go home every day with the same number of eyes, fingers, and toes you came to work with."

Dimmitt and Schulz explain the national and Corporate safety contests in which the division is involved. Schulz said:

"Safety itself is a contest. It's a contest against pain, hospitalization, disability, or death. It's each individual employe who will win or lose that contest."

Real Bonanzas

Safety Cribs 'Treasure Chests'

Wanda May, Convair safety crib attendant at the Lindbergh Field plant, said most employes think of the safety cribs at the three Convair plants as an optical department or shoe store.

"But we issue many other types of equipment to make the employe safe and comfortable on the job," she points out.

Among items that may be checked out if needed on the job are safety goggles, face shields, respirators, hard hats—and even films from a well-stocked safety film library.

Among the more popular of 50 films available for supervisors to use in departmental safety meeting are "Gary Moore's Safety Skit," "Fact Finding—Not Fault Finding," "People are the Puzzle," and "Locked On."

Prescription blanks for safety glasses, available at each of the safety cribs, are taken by the employe to the ophthalmologist of his choice for lens prescription and precision measurements for the size and shape of frames. The blank then is returned to the safety crib and is sent to a local optical company.

"Our prescription safety glasses differ from regular ophthalmic lenses in two important respects," Wanda said. "They are thicker and they have been subjected to a special heat strengthening process that makes them high-impact resistant. Both lenses and frames meet rigid industrial safety code standards."

Safety shoes with built-in steel toe guards are the most popular sales item at the safety cribs and come in a variety of styles.

"We sell as many for dress as for work use," Wanda commented. "Safety shoes, if properly fitted, are as comfortable as any other type."

SHOE TALK—Wanda May, safety crib attendant at Lindbergh Field plant, discusses new styles of safety shoes with Fred Fowler of Dept. 045.

Extra Caution Is Safety Plea

(Continued from Page 1)

fered needless pain and anguish—in some cases permanent disability and in all cases partial loss of wages while off work," Dimmitt said. "As long as we have one injury there is need for improvement."

R. P. Schulz, senior safety engineer, said investigation shows most of the accidents at Convair are caused by "people problems" and are attributable to lack of awareness.

"We must remind ourselves that our work here requires eight hours a day of attention and thought," he said. "We can't allow our thoughts to wander . . ."

'People-Caused'

Most Accidents Traced to Lack Of 'Basic Needs'

More than 200 Convair supervisors have attended the first series of "Modern Safety Management" seminars being presented by the safety and educational services sections in an attempt to reduce accidents and improve the division's safety record.

Del Dimmitt, chief of fire and safety, said the seminars "explore some of the underlying causes of industrial accidents" and that all supervisors in the division will be scheduled to attend one of the two-hour seminars during the next year.

David Chigos of educational services, the instructor, said 97 per cent of all industrial accidents can be avoided because they are people-caused. The other three per cent result from material or machine failure.

"Of the 97 per cent of people-caused accidents, 68 per cent are due to negligence or inattention on the part of the individual, 11 per cent by direct violation of known safety rules, and 18 per cent by deliberate misuse of equipment," he said.

"Instead of ineffective repetition of safety rules, we try to get at the heart of what causes people to act erratically."

Chigos stresses eight "basic needs" of the individual—power, enlightenment, affection, skill, well being, rectitude, wealth, and respect—which he believes can be enhanced directly or indirectly by the supervisor.

"When people are deprived of these, they probably will act erratically at times," he said. "And that can set the stage for an accident."

Dimmitt said analysis of 1,000 accidents at Convair that resulted from misuse of equipment, negligence, or violation of safety rules showed that all could be traced to deprivation of at least one of the eight "basic needs" of the individual.

"Each accident seems to be slightly different from others of the same type," Dimmitt said.

"We're looking at some of the underlying causes. Perhaps in that way we can eliminate some of those many 'accidents that should never have happened'."

'Personal Contact' Seen As Key to Safer Plants

Convair division's safety engineers now are spending more time "out of the office and in the plant" in personal contact work with employes and supervisors and in search of present or potential safety hazards.

Del Dimmitt, chief of fire and safety, said each of the safety engineers now is spending about 6½ hours a day "in the shop" in a concentrated effort to instill "constant attention to safety" as a way of life for every employe.

"Their aim is to get to know every employe and to assist every supervisor in seeking ways to eliminate conditions that could result in accidents," Dimmitt said.

"We hope the increased 'visibility' of our safety engineers will help encourage and stimulate overall safety awareness. They are there to help follow through with ideas that can make the work area safer."

Jim Cooper is safety engineer for the DC-10 and C-5 production areas in Bldgs. 2 and 3 at Lindbergh Field, Sam Galasso covers the machine shop areas in Bldgs. 1 and 5 at LF, and Dick Schulz has responsibility for Bldg. 4, the laboratories at LF, and the Harbor Drive facility.

Len Breen covers the Kearny Mesa plant and serves as division industrial hygienist. Ernie Cox, a safety technician, handles AF Plant 19. Glen Berg is safety engineer for Convair operations at Vandenberg AFB and Les King at the Eastern Test Range (Cape Kennedy).

Breen, an industrial hygienist, has a unique job that requires checking receipt, storage, use, and shipment of all radioactive and toxic materials. He keeps records on all radioactive isotopes being used, supervises use of radiation film badges, and checks shielding and work areas in which radiation is being used.

Breen also conducts field studies as needed for analysis of temperature, lighting, vibration, pressure, noise, and air pollution that could affect employes in the area.

The division safety engineers make routine safety and housekeeping inspections in all work areas and are available to assist with any problem in which employe health and safety may be involved.

Safe Practices Particularly Important to Maintenancemen

Vern Sharp, general foreman for Convair's maintenance Dept. 250-3 at Lindbergh Field and AF Plant 19, is a big booster for the division's safety program—and it pays off.

"Safety is easy to discuss with our people because we're exposed to so many hazards," Sharp commented. "In many cases we wouldn't get a second chance. We have to do it right the first time."

Sharp talks up safety at weekly meetings for supervision and each of the department's supervisors, in turn, holds weekly safety and housekeeping meetings with his personnel.

"Safety is a second nature in our business," Sharp said. "It's up to us as supervisors to constantly remind our people of its importance."

Sharp said any maintenance problem that involves safety hazards gets top priority—and immediate attention — by the maintenance department. Maintenance personnel are dispatched immediately in all emergencies.

PRIORITY—Vern Sharp, Dept. 250-3 general foreman, sees that mainenance problems involving safety hazards get immediate attention.

Sheet Metal Leads Group 1 Safety

(Continued from Page 1)

both divisions," Dimmitt said. "Only a fraction of points per employe separates the leaders."

Trophies are awarded at the end of each year to winning departments. Points are subtracted for serious medical cases, housekeeping violations, etc.

Inspections are conducted by fire and safety section personnel and are reviewed at monthly general safety meetings for all department heads.

Following were contest standings early last month:

GROUP 1

1. 001 sheet metal
2. 401-0/1/2/3/8/9 tool mfg., etc.
3. 731/756 machine shop
4. 250-3/6 maintenance
5. 460 tool services
6. 031/049 experimental
7. 744/759 support operations, etc.
8. 250-1/4 maintenance
9. 027 F-111 assembly
10. 250-5 transportation
11. 019 metal bond, etc.
12. 045 C-5 empennage
13. 002/020 processing
14. 401-5 jigs & fixtures
15. 015 machine shop
16. 732/734 sheet metal
17. 046 DC-10 assembly
18. 518 graphic reproduction
19. 250-0/2 plant engineering operations
20. 451/452/453 tool manufacturing
21. 833/836 stores, traffic
22. 401-4/407 tool and die
23. 733 processing
24. 454 mock-up, plastics
25. 761 missile assembly, checkout

GROUP 2

1. 101 data processing
2. 780-4/6/7 AGERD
3. 143 reliability control
4. 141 process quality engineering
5. 780-2/3/5 R&D harness
6. 016 electric bench
7. 144/148 procurement labs
8. 832/835 production control
9. 780-1 production electronics
10. 142 calibration labs
11. 149 reliability control
12. 578 engineering test
13. 059 production control
14. 954/967 LVP reproduction, lab
15. 840-3 material disposal
16. 507/508 wind tunnels
17. 550 elect. test labs
18. 592 life sciences
19. 572 material and processes
20. 596 space sciences

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 23, No. 14 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, July 22, 1970

Annual Convair Picnic Set For Missile Park

Convair Management Association and Convair Recreation Association have scheduled their big annual picnic for division families from 11 a.m. to 5 p.m. Aug. 9 at Missile Park.

Tickets—limited in number and covering lunch and many special attractions — are being sold at $1.50 for adults and $1 for children under 12 by Management Association boosters and at all employe benefits, CRA, and other Management Association ticket outlets.

Barbecue beef dinner with corn on the cob, cole slaw, rolls, butter, and ice cream will be served from noon to 2 p.m. Punch and coffee will be available all day. Beer will be 20 cents additional.

The Julian Gunfighters will give periodic exhibitions and a stage show, featuring Convair talent, is scheduled. A popular rock band will play for teenage dancing and a dance contest with record prizes.

A large color TV set will be awarded in a special "door prize" drawing open only to division employes.

All entering children will receive five 5-cent tickets for snow cones, ice cream, popcorn, and cokes. Rides on the merry-go-round and the Kearny Mesa Pacific Railroad miniature train will be free all day. Balloons will be distributed and clowns will entertain the younger set.

Kids' games, including a sawdust treasure hunt, and a special drawing for children's prizes will be held.

Free bingo games with prizes will be held through the afternoon. Other adult participation games will include a sock race, spoon race, egg throwing and bat twirling contests, and a "men's prettiest leg" competition.

The Management Association's scholarship fund will benefit from a giant drawing for which separate tickets will be sold. Prizes will include two San Diego Chargers season tickets, a trip for two to Las Vegas, a trip for two to

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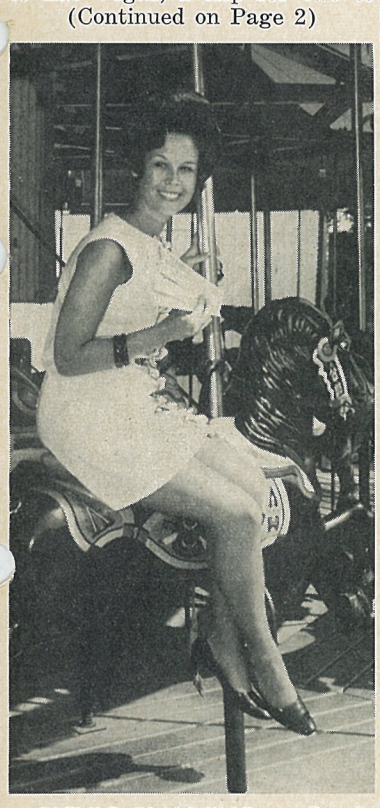
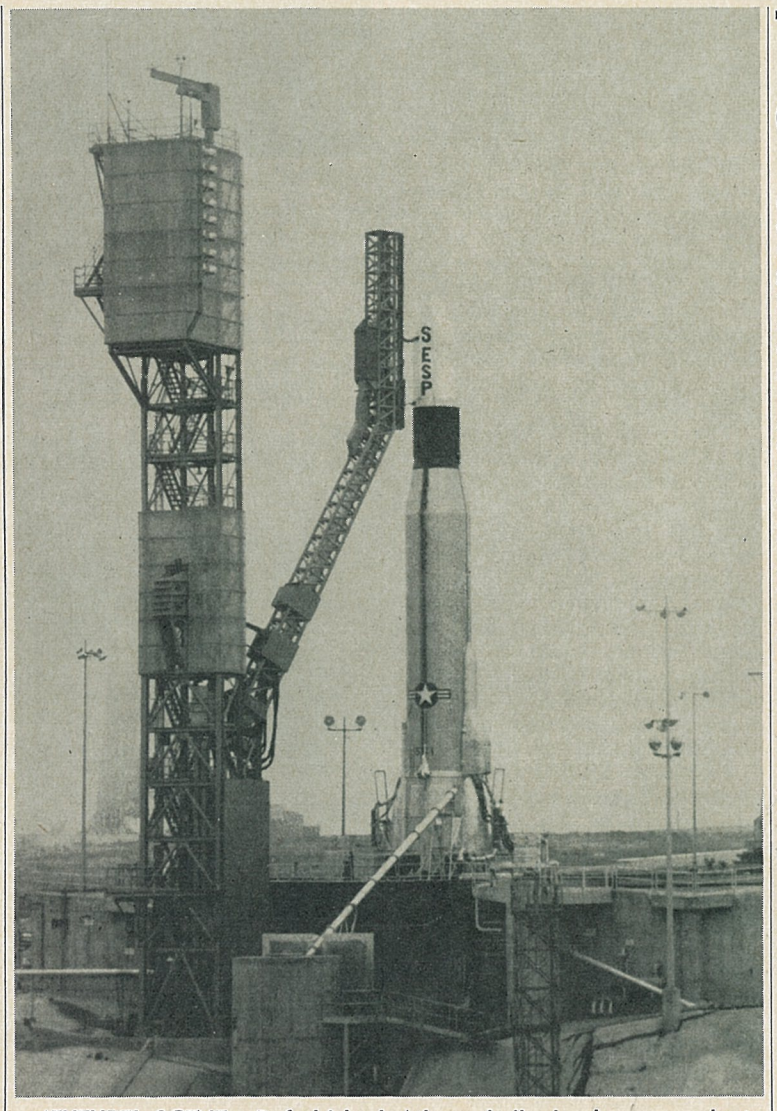


PICNIC PLANNING — Carole Wrightson, Dept. 954-0 secretary, reminds Convair people tickets are on sale for annual family picnic Aug. 9 at Missile Park. Kids attending will have free rides all day on merry-go-round.



'FUTURE' SCENE—Refurbished Atlas missile is shown ready to launch future Convair-built OV1 satellites in Air Force Space Experiments Support Program. Photo actually is one of a previous OV1 launch vehicle that has been retouched by an artist to show SESP designation on OV1 fairing.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—Sometimes we lose money in the plant vending machines. How can we get refunds?

A—Telephone "Automatic Retailers Association" services at KM ext. 1300 or LF ext. 1677, indicate name, department number, and work location. An ARA supervisor, route man or maintenance man will make the refund.

★ ★ ★

Q—Most contracts now have value engineering incentive clauses. However, there appears to be no common understanding on just what would qualify as a value engineering proposal. Why can't a short seminar be arranged to explain requirements?

A—Although requirements are well known in some quarters the knowledge probably is not as widespread as would be desirable. A lecture on "Contractual Aspects of Value Engineering" has been included in the VE workshop agenda. Two such workshops have been held and another is scheduled for the fall. Addition of a VE incentive clause to the DC-10 contract is expected soon and when this develops an indoctrination program will be instituted specifically for DC-10 areas.

★ ★ ★

Q—Why are members of the Savings and Stock Investment Plan required to invest at least a third in government bonds?

A—General Dynamics selected government bonds as a part of the portfolio as they are considered a conservative investment and a stabilizing factor in any sound investment program.

★ ★ ★

Q—Why is it okay for a truck to park in the rider-driver lot with only two people while there must be three people in my car?

A—Requirements are: vehicles designed for four or more persons must have at least a driver and two riders; vehicles designed for two persons must have a driver and one rider. Size of vehicle is not the determining factor.

(Continued on Page 4)

Two OV1 Spacecraft Ordered For Launch

Convair division has been awarded a $2,585,000 contract for production of two OV1 spacecraft for use next year in launch of six government-furnished experiments for the Space Experiments Support Program (SESP) Office of the Air Force Space and Missile Systems Organization.

Vern Ottem, OV1 program manager, said the two spacecraft—OV1-20 and OV1-21—are scheduled to be lifted into space in July of 1971 from Vandenberg AFB atop Atlas missile 102F. The Atlas, stored several years since being removed from Strategic Air Command inventory, will be refurbished at Convair's Kearny Mesa plant for its new role as a launch vehicle.

Under the contract, Convair also will produce a nose fairing to cover the OV1s and experiments during launch and a mounting truss for the two vehicles and will integrate and provide launch support services for the experiments.

Plans for the mission are under the direction of Lt. Col. Michael Hoptay, chief of the space experiments flight support division of SAMSO. The Atlas launch will be conducted by the 6595th Aerospace Test Wing at Vandenberg. Bob Frye is contract administrator for Convair.

Ottem said the OV1 propulsion systems, using solid-fuel propellant, will be like those used previously in the OV1 program. The experiments, however, will be attached directly to the propulsion modules rather than encased in the solar-cell-covered satellite canisters used in most previous OV1 missions.

Each of the OV1 propulsion modules also is equipped with an attitude control system with 12 small peroxide-using motors, fired in any desired combination, for precision pitch, yaw, and roll torques.

OV1-20 will be placed in a 75 by 1,000-mile orbit and its three experiments will measure atmospheric density variations at various altitudes, measure spatial energy dependence of trapped proton flux, and test a new technique for measuring electron density and temperature in the upper ionosphere.

One of the experiments will be ejected in orbit and the other two will remain attached to the propulsion module.

OV1-21 will have an initial orbit of 75 by 450 nautical miles. Its secondary experiment, a radar tracking density satellite known as "Musketball II," will be released to measure atmospheric density at about 75 nautical miles for 20 to 40 days.

The OV1-21 orbit later will be circularized at 450 nautical miles through firing of an added "kick rocket." The two remaining primary experiments then will be ejected into the final orbit.

One — actually two packages containing three seven-foot inflatable sphere and one two-foot rigid sphere—will be used in a study of the ballistic coefficients as such spheres and their correlation with physical and aerodynamics conditions and with theoretical predictions.

The other will be a special 82.4-pound radar calibration sphere that is expected to be used daily for more than five years for calibration of total radar systems.

Production of the two OV1 propulsion modules and related hardware will be handled by the special projects group of the Convair research and engineering department.

SESP is a new "customer" for the Convair OV1. Previously produced OV1s were used in Air Force Office of Aerospace Research experiment launches.

Atlas-Centaur Support Funds Okayed by NASA

Convair division has been awarded a $6 million contract by NASA's Lewis Research Center for Atlas-Centaur launch and support services at the Eastern Test Range and related activities through March 31, 1971.

Included will be launch of AC-21 in the Orbiting Astronomical Observatory-B mission, launch of AC-25 in an INTELSAT mission, and pre-launch preparation and checkout of AC-23 and AC-24 launch vehicles to send Mariner spacecraft on Mars flyby next year.

The contract, as amended, also covers modification of Complex 36-A for INTELSAT launches, build-up of systems for future Improved Centaur launches, and preliminary Titan-Centaur inte-

(Continued on Page 2)

U.S. Bonds Buying by Deduction Boosted Over 90 Pct. at Convair

"The 1970 U.S. Savings Bonds drive was a success. This is the fourth consecutive year that Convair division has achieved more than 90 per cent participation," stated Jack L. Bowers, president of Convair division. He further noted that 227 functions had 100 per cent employe participation. Each of these functions received small American flags mounted on pedestals in recognition of its achievement.

"Before the campaign began, Convair had only 74 per cent employe participation," C. F. McMenamy, campaign coordinator, said. "During the campaign, 1,967 employes—more than 60 per cent of those not participating when the drive began—signed up as new bonds buyers. In addition, 300 employes increased the amount of their Savings Bonds payroll deduction."

Success of the campaign was credited "in large part to the departmental bond drive coordinators who did an outstanding job of explaining the advantages of U.S. Savings Bonds and the convenience of the payroll savings plan."

Coordinators were Bill Ochodnicky, engineering; Frank Blair and Don Fagan, operations; Lyle Wood and Gerry Zahrte, material; Fred Wynkoop, finance; Bill Chana, market analysis and planning; Lee Jacobson and Val Wynn, reliability control; Jim Watt, industrial relations; Dick Peck, legal; Tom Dougherty, contracts; Paul Green, launch vehicle programs; John Kern, communications; Nick Durvis, new product development; Ray Forrest, Vandenberg AFB; and Marv Tooley, Eastern Test Range.

FOUR DECADES—Leo Nowak, right, Dept. 027 assembler, receives 40-year pin from Jack Bowers, Convair division president. Nowak started at Consolidated in Buffalo and moved to San Diego with company in 1935. Nowak has worked on almost every aircraft wing Convair has produced.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due during the month of July.

Thirty-five year: Dept. 999, Frank R. Field.

Thirty-year: Dept. 002, K. W. Richey; 019, A. Stirling Jr.; 027, H. W. Arnold, A. O. Camp, K. R. Erb; 031, W. E. Barnett, R. S. Bryan, D. D. Claxton, V. H. Schade; 045, J. Dimitrie, C. R. Mansfield; 046, C. C. Baker, J. E. Cassidy, H. F. Horan, G. W. Marx Jr.; F. J. Cech, W. C. Pahl; 059, J. R. Mikulsky; 143, F. B. Shockley; 148, G. W. Turner; 149, R. L. Stanberry; 195, R. H. McManus, R. M. Williams Jr.; 204, E. H. Damarus; A. H. Damarus, H. E. Rolan; 401, J. L. Cortez, Billie L. Creason; 420, J. A. Hickman; 460, M. A. Murphy; 506, D. G. Moody; 572, P. J. Ferrara; 587, G. F. Foelsch; 596, L. C. Wilson; 756, H. M. Jones, H. W. Niermann, R. K. Wharton; 999, W. M. Clapp.

Twenty-five-year: Dept. 045, C. P. Welch; 143, E. W. Leyva; 144, W. M. Foster; 149, Lela M. Brotherton; 400, A. G. Lilley; 524, Dora B. Burke; 734, W. L. Lawson; 954, H. E. Seibert; 988, T. R. Ohman.

Twenty-year: Dept. 015, Jimmie B. Denton, A. K. McConnell; 027, L. G. Kamin; 031, W. B. House; 046, R. R. Rote, 049, I. E. Whitbey; 057, D. E. Stouffer; 059, J. L. Bershaw, A. A. Broderick Jr.; 131, E. A. Ashmore; 143, Maryann A. McColloch; 144, W. L. Curtis; 149, Rose Marie Darling; 170, Etta R. Beckner; 250, M. L. Bates, J. G. Frazier, E. H. Minder, R. E. Wells; 400, H. A. Anderson, T. P. Emery, M. Levenson; 403, D. E. Evanson; 460, Dara K. Adams, B. R. Hudson; 511, C. L. McLaughlin; 524, Billie L. Simpson; 545, J. A. De Costa, G. E. Shields; 553, L. C. Nardi; 579, O. W. Potter; 585, R. L. Holt; 589, W. E. Knapton; 761, K. F. Cash; 780, Wyone C. Smith, W. F. Strickland; 830, M. S. Stepich; 831, U. J. Makela; 833, C. H. Huss, F. C. Woods Jr.; 835, H. S. Alderman Jr., J. Radami; 840, Nadine Don Carlos; 985, O. J. Bazoon Jr.

Fifteen-year: Dept. 015, W. A. Warren; 020, E. C. Whitten; 027, A. P. Medina, H. R. Morrow; 059, Mary A. Maxted; 110, J. R. Holter Jr.; 130, J. A. Croft, C. B. Hassell; 131, R. L. Oakley; 140, G. H. Zoellner; 144, J. L. Parr; 149, J. S. Adams; 195, C. J. Sack Jr.; 203, D. L. Fagan; 250, D. L. Vockrodt; 401, J. E. Huts; 407, N. E. Cosgano; 454, Y. Ledesma; 515, J. R. Cash; 545, F. A. Wulf; 553, W. R. Beverly; 578, F. M. Urban; 579, A. W. Hamrick; 587, P. M. Nissley; 591, R. F. Klawa; 733, Aileene Hardy; 734, B. Kantor; 756, K. F. Minegar; 759, D. G. Jackson; 780, Bernice L. Hughes; 952, R. L. Johnson; 963, W. E. Evans Jr.; 966, F. I. Backus Jr.; 967, H. D. Kyler, L. White; 979, W. F. Herndon; 986, C. E. Kohler Jr., H. G. Mileur; 989, K. C. Lejman.

Ten-year: Dept. 015, W. G. Moser; 027, A. R. Mettinger; 046, Lillie B. Morgan; 059, L. L. Martinez; 101, S. R. Await; 130, Joy Kiler; 141, D. A. Menard; 250, R. M. Beard, C. Holt; 501, D. J. Powell; 524, Velma D. Bolin, Karen M. Little; 572, E. E. Poller Jr.; 780, Darlene G. Carr, Ruth V. Rice; 810, Dorothy T. Strunk; 820, Lyda S. McCleary; 833, J. A. Garate; 835, C. E. Armani; 860, K. F. Horn; 953, D. A. Paukovec; 954, F. C. Porter; 979, J. C. Littlefield, R. G. Tucker; 985, R. P. Dunn; 989, L. Hinckley, R. E. Newby.

ELECTRONICS

Thirty-year: Dept. 423, P. R. Hoffman; 921, R. H. Nicholson.

Twenty-five-year: Dept. 423, Wilma M. Stevens; 427, J. V. Wahl.

Twenty-year: Dept. 617, T. H. Scholder.

Fifteen-year: Dept. 423, R. W. Thomas; 614, R. L. Olson; 617, G. V. Trivoli; 774, D. C. Dilworth.

Ten-year: Dept. 102, C. C. Clickner; 204, J. J. Healy; 413, G. A. Andert; 777, L. P. Smith.

Awards

CONVAIR

Employe Suggestion awards approved for week ending July 2:

H. W. Argrow, Dept. 131-1, $15; C. F. Avina, 059-6, $30; R. J. Baldwin, 574-2, $91.70; J. Baptista, 015-0, $15; J. F. Batchelder, 046-0, $30.80; W. S. Betts Jr., 584-0, $15; H. B. Bishop, 401-5, $15; R. L. Black, 507-0, $1,775.90; W. P. Briggs, 046-0, $15; J. D. Burns, 191-0, $25; A. Candelaria, 045-0, $165.10; R. R. Culp, 507-0, $1,775.90; W. P. Espinosa, 967-5, $79.30; F. T. Ferguson, 507-0, $70.30; P. M. Houtkooper, 130-1, $39.70; B. F. Hull, 250-2, $29; A. D. Kozakiewicz, 015-0, $133.75; J. T. Kucala, 045-0, $15; J. E. Lemon, 015-0, $133.75; E. V. Marikle Jr., 507-0, $15; I. P. Mouet, 046-0, $15; L. W. Olsen, 015-0, $15.30; C. D. Pedersen, 059-7, $913.80; V. H. Porter, 198-0, $37.10; J. D. Reading, 454-0, $15; R. R. Reekers, 143-1, $28.70; F. J. Salazar, 001-0, $15; R. W. Sanger, 507-0, $15; J. J. Valenti, 407-0, $15; D. L. Weelborg, 015-0, $15.

Employe Suggestion awards approved for week ending July 10:

A. R. Anderson, Dept. 027-0, $60 (four awards); R. Baldwin, 574-2, $40.80; L. C. Bennett, 951-6, $40.30; K. N. Brackin, 979-3, $71.40; R. M. Braeutigam Jr., 027-0, $15; M. S. Carson, 143-3, $15; N. C. Donley, 027-0, $15; Willadean Ellis, 780-6, $156.50; J. H. Gahagen, 059-5, $37.70; C. Greve Jr., 518-1, $15; M. L. Lima, 979-5, $15; M. L. Lodge, 250-1, $15; M. M. Lopez, 045-0, $15; W. G. Lux, 144-1, $15; J. F. McClure, 027-0, $17.60; B. T. Medearis, 027-0, $22; T. W. Myers, 780-1, $15; V. Prado, 027-0, $38.90; J. R. Price, 019-0, $15; R. D. Prock, 454-0, $15; J. L. Remiker, 567-1, $15; L. Rodrigues, 195-1, $305; C. G. Skeen, 574-2, $20; D. B. Warren, 001-0, $20; C. W. Weber Jr., 574-2, $15; S. L. Williams, 027-0, $15; G. W. Wilson, 979-5, $15; W. J. Wineski, 046-0, $134.80; H. A. Youngs, 020-0, $24.60.

Retirements

CONVAIR

ADKINSON — Allen D., Dept. 250-2. Seniority date March 28, 1956, retired June 26.

ALLEMAN—Steward F., Dept., 143-3. Seniority date Jan. 6, 1959, retired June 30.

BAKER—Hugh L., Dept. 250-6. Seniority date June 25, 1951, retired June 30.

BASORE — Douglas C., Dept. 834-2. Seniority date June 2, 1960, retired June 5.

BLEVINS — Henry R., Dept. 131-1. Seniority date May 7, 1952, retired June 12.

BOLES—Ralph O., Dept. 979-1. Seniority date May 13, 1957, retired June 12.

BRUCHEZ—Mary F., Dept. 518. Seniority date Dec. 10, 1952, retired June 30.

CAREY—William R., Dept. 759. Seniority date Aug. 12, 1940, retired June 19.

CLAYTON — George L., Dept. 015-0. Seniority date Nov. 13, 1946, retired June 22.

COSTELLO — William A., Dept. 515. Seniority date Aug. 24, 1953, retired May 25.

CUZNER—Ruth M., Dept. 193-3. Seniority date March 23, 1951, retired June 30.

ELLIS—George J., Dept. 015-0. Seniority date June 10, 1947, retired June 30.

GARNER—Donald H., Dept. 400-6. Seniority date Jan. 30, 1967, retired June 30.

HAINES—Lenard N., Dept. 985-1. Seniority date May 9, 1955, retired June 30.

HALL—Kenneth C., Dept. 250-2. Seniority date Sept. 29, 1958, retired June 30.

JORGENSEN—Morton C., Dept. 149-7. Seniority date May 8, 1947, retired June 30.

KENT—Mable R., Dept. 170-9. Seniority date Aug. 14, 1958, retired June 19.

LAWSON—Robert K., Dept. 515. Seniority date April 11, 1957, retired June 5.

LENNON—John J., Dept. 979-4. Seniority date July 10, 1952, retired June 12.

McKINLEY—James K., Dept. 840-0. Seniority date Sept. 8, 1947, retired June 30.

MEYER—Charles H., Dept. 195-3. Seniority date Oct. 31, 1946, retired June 30.

MILIS—Steven R., Dept. 545-3. Seniority date April 28, 1941, retired June 12.

PRUITT—Mark W., Dept. 143-6. Seniority date March 8, 1951, retired April 16.

RAINEY—James H., Dept. 250-5. Seniority date July 23, 1956, retired June 30.

SANKOVICH—Dolly A., Dept. 016-0. Seniority date June 26, 1947, retired May 28.

SWEENEY—Michael L., Dept. 059-2. Seniority date Nov. 17, 1943, retired June 26.

WEAVER—John R., Dept. 759. Seniority date July 24, 1951, retired June 30.

ZAISER—Donald M., Dept. 131-1. Seniority date Aug. 3, 1945, retired June 30.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Alitalia Plans To Buy DC-10s

Alitalia, the Italian national airline, has announced plans to purchase four intercontinental Series 30 McDonnell Douglas DC-10 trijetliners with Convair division-built wide-bodied fuselages and to take options on six others.

Jack Hurt, Convair DC-10 program manager, said the order, which still awaits approval by the Italian government, brings the number of firm orders and options for DC-10s to 214.

Purchase price of the four DC-10s, powered by General Electric CF6-50A fanjet engines, will be about $68 million exclusive of spare parts orders. Deliveries are expected to begin early in 1973.

Officials said Alitalia selected the DC-10 tri-jet after an extensive technical and economic evaluation of all available "new generation" commercial transports characterized by wide and spacious cabins.

The Series 30 DC-10s selected by Alitalia for operation on its international routes will carry 255 passengers, 24 in first-class and 231 in tourist-class accommodations, more than 6,000 miles.

Length of the DC-10 is 182 feet and wingspan of the Series 30 is 161 feet 4 inches. Maximum gross weight is 555,000 pounds, including 240,000 pounds (35,800 gallons) of fuel. Each of the three engines will provide 49,000 pounds of takeoff thrust.

Alitalia's DC-10s will have three food preparation and serving centers in the main cabin, leaving the 4,640-cubic-foot lower compartment open for palletized, containerized, and bulk cargo shipment.

Picnic Set For Missile Park

(Continued from Page 1)

San Francisco, a shotgun, a home beer bar and dispenser, binoculars, a set of golf clubs, a portable TV, a rotisserie, and tape recorder.

A water dunking machine, borrowed from Vandenberg AFB, also will be used in a fund-raising event for the Management Association scholarship fund.

Participants, for 25 cents, will get three chances to hit a "bull's eye" with baseballs. A hit will drop a volunteer "executive" into a big tub of water. First volunteer to sit on the collapsible seat will be Herb Day, Management Association president.

Bob Ratliff, picnic chairman, said the Management Association is underwriting part of the cost for the picnic and related prizes and entertainment. Only 4,000 tickets will be sold to prevent overcrowding of the park.

Ratliff urges early ticket purchases for families wishing to attend. "We may have a lot of unhappy people when we come down to the wire early next month and there are no tickets left," he commented.

Atlas-Centaur Funds Okayed

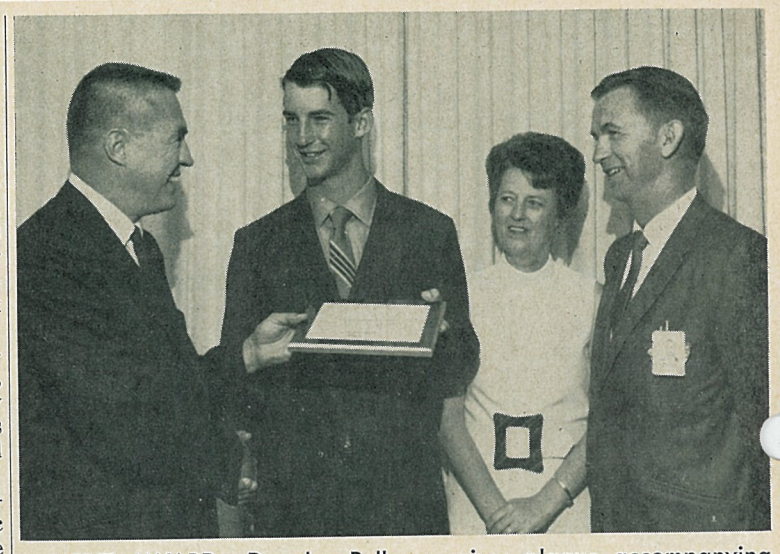
(Continued from Page 1)

gration-related effort.

Don McHargue, contract administrator, said maximum potential value of the cost plus award-fee contract, as amended, will be $6,336,324.

Atlas and Centaur vehicles for the AC-21 mission were erected at ETR week before last and prelaunch systems checkout began to support a launch of the OAO-B "no earlier than Oct. 1." The OAO will provide astronomers with photographic data from above the distortion of the atmosphere.

AC-25, scheduled in January next year, will launch the first of the COMSAT-managed INTELSAT IV commercial communications satellites for a consortium of nations from around the world.



MERIT AWARD—Douglas Peller receives plaque accompanying General Dynamics-sponsored National Merit Scholarship from Lyman Josephs, Convair vice president and general manager. At right are Peller's father, Bob Peller of Dept. 585-0, and mother.

Free Travel, Too

College 'Dream' Comes True For DCASO Student Aide

Karen Fairchild, 17-year-old student aide in the Defense Contract Administration Services Office (DCASO) at Convair division's Kearny Mesa plant, doesn't have to worry any more about how she'll finance her college education.

She has been awarded a $7,200 four-year California State Scholarship to the University of Santa Clara, where she will study biology and chemistry—and Pacific Southwest Airlines has volunteered free air transportation between San Diego and San Francisco for the four years!

Karen obtained her job as a DCASO production division secretary under a federal youth opportunity program last summer several months after her father died. She worked half time during the last school year while still maintaining an "A" average in school.

Capt. Vern Karlin, chief of the DCASO production division and Karen's supervisor, has been impressed with her professionalism and the personal pride she takes in her work.

"It's challenging for us to try to keep up with her insatiable interest in learning and in doing the job right the first time," he said.

"Her performance has far exceeded our expectations. Karen is a fine example of the 'real youth' of America today. She is a credit to herself, the DCASO, and her generation."

PSA executives offered Karen the free air travel after reading a letter one of her brothers, Stephen, 11, sent without her knowledge last month to The San Diego Union asking that her picture be published. It was.

"Dad died last year," Stephen explained in the letter, "and Karen helps Mom take care of the house and the younger children." (She has three brothers and a sister.)

DCASO SCHOLAR — Karen Fairchild, DCASO student aide at Convair's Kearny Mesa plant who has won a four-year scholarship and free air transportation to University of Santa Clara, discusses one of her work assignments with Capt. Vern Karlin, chief of DCASO production division.

"She is an A student and belongs to the California Scholarship Federation," the neatly-printed letter continued. "And every day after school she goes to work at General Dynamics as a secretary."

Stephen, in a phone conversation later with a reporter, told how Karen has helped keep the family going and has taken the kids to ballgames and helped with their homework.

"You know, she's pretty smart —smarter than me—and doesn't brag about it," Stephen said.

Although Karen loves Stephen, she says she was a little unhappy with him when she learned he had sent a letter about her to a newspaper.

She says she loves her DCASO job, too, and hopes she can obtain a similar position during the summers while she's in college. After graduation, her ambition is to become a research chemist or biochemist.

The DCASO people with whom she works at Convair say they'll hate to see her leave in September—but wish her well!

Scholarship Plaque Given Convair Son

Douglas Peller, 17-year-old son of Bob Peller, a design specialist in Convair's Dept. 585-0, has been presented a plaque in recognition of his having been awarded a General Dynamics-sponsored National Merit Scholarship.

Peller, a member of the first graduating class at Patrick Henry High in San Carlos, previously had been named as one of seven sons of General Dynamics employes across the nation to receive one of the $500 scholarships **(GD/NEWS, May 13)**.

His mother and father were present to see him receive the plaque from Lyman Josephs, Convair division vice president and general manager, earlier this month at the Kearny Mesa plant.

Peller plans to attend USC to study math and engineering and plans a career in computer systems.

He is a life member of the California Scholarship Federation and served as chairman of his high school's athletic committee and as a member of the constitution committee; physics, math, and chemistry teams; and band and orchestra.

Personals

Heartfelt thanks to my friends and coworkers for the farewell party. I am proud to have known and worked with you these many years. Thanks, too, for the golf bag, balls, and "snake bite potion"—all useful to my retirement activities. Best wishes to all.

Steve Milis
Dept. 545-3 (ret.)

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

Fat Checks Distributed To Reward Bright Ideas

Lewis R. Fowler, a Convair design engineer, recently received a $1,002 Employe Suggestion award, five certificates of commendation for VCPs expected to save a total of $356,220 during the next year in the DC-10 program, and a five credit Cost Reduction Achievement pin.

Fowler's ES eliminated duplication of detailed drawings. When duplicate drawings are required on two or more documents he suggested superimposing the name of each document on the drawing, reproducing it by copy machine, and then returning it to its original form.

All of the VCPs involved a different, and in most cases an easier, method of manufacturing DC-10 parts.

A Convair employe for 12 years, Fowler has submitted about 25 suggestions.

* * *

Howard M. Harvey, an engineering drawing checker, received an additional payment of $1,173.62 for an ES submitted earlier this year, bringing the total received to $2,863.10.

Harvey's suggestion was for reducing distribution of blueprints. He suggested that "off board" engineering drawings go to the checking group without prior reproduction, distribution, and filing of prints.

He previously had received a $1,689.48 partial payment for the same suggestion (**GD/NEWS, April 15.**)

Harvey, an 18 year Convair veteran, said "Since it's summer and I have a vacation coming up, I think I'll talk my wife into touring Europe."

General Dynamics is an Equal Opportunity employer.

IDEA PAYOFF—Dan Applegate, left, director of product design, presents Employe Suggestion award checks to Lewis R. Fowler, center, and Howard M. Harvey. Fowler received $1,002 ES, five certificates of commendations for VCP's, and five-credit Cost Reduction Achievement Award pin. Harvey received additional payment of $1,173.62 for ES submitted earlier in year, bringing total to $2,863.10.

Buffat Eliminates 'Weighty' Cost, Saves Funds on Floor Inspections

B. A. Buffat, inspection supervisor in Convair's Dept. 143-1 at Kearny Mesa, recently received four commendation certificates simultaneously for value control projects he had initiated that are expected to save the division $417,240 in the DC-10 program.

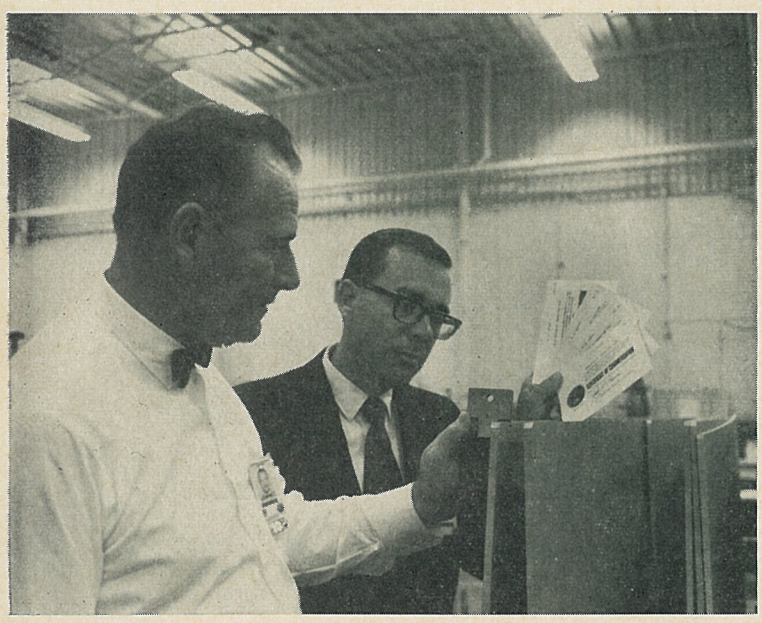
Buffat designed a small check gauge, weighing three or four ounces, to replace a 300-pound drill plate that was being used in inspection of the outside periphery of DC-10 floor panels.

This eliminated a requirement for a crane, crane operator, and two inspectors to move the heavy drill plate and line it up for the inspection and is expected to save $120,500 for the division.

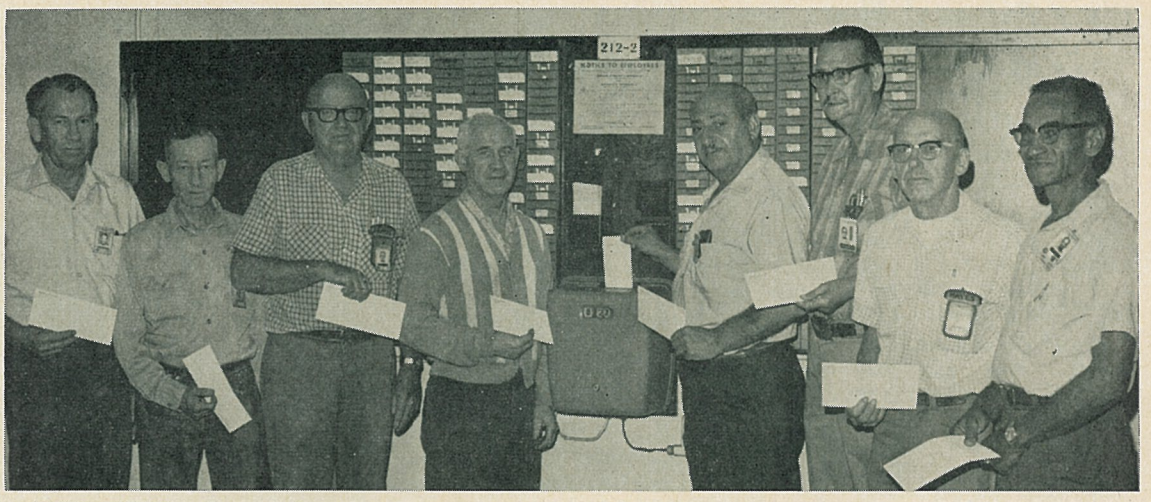
A saving of $206,340 is expected from a study and evaluation by Buffat of each inspection task accomplished during the fabrication and processing of the DC-10 floor panels. This resulted in elimination of many minor but time-consuming operations.

Buffat's action in streamlining inspection procedures during floor panel kitting operations for more efficient and timely action is expected to save $84,200.

He also was credited for $6,200 in savings from a joint project with tool control supervision which resulted in revised procedures for inspection of control tools.



JOB SIMPLIFICATION—Bud Buffat, left, inspection supervisor in Convair's Dept. 143-1, demonstrates portable gauge he devised for use in checking DC-10 floor panels for D. R. Miller, chief of process control quality engineering. Lightweight gauge takes place of 300-pound drill plate. Miller holds commendation certificates being presented to Buffat for cost reduction projects.



ELITE EIGHT—Outstanding employes were lauded for perfect attendance during 1969, never late, absent or early-out! Pictured in front of time clock they punch each day, from left, are R. W. Bolton, J. W. Dally, G. R. Simpson, M. H. Button, R. M. Crise, B. L. Baxley, A. R. Mayes, and E. W. Nolte.

Eight Earn Praise For Perfect Attendance

Eight Convair division assemblers with perfect attendance records during 1969 received personal letters of commendation from Harry G. Rote, F-111 assembly general foreman, in special ceremonies this month at AF Plant 19.

Honored were B. L. Baxley, R. W. Bolton, M. H. Button, R. M. Crise, J. W. Dally, A. R. Mayes, E. W. Nolte, and G. R. Simpson.

All are veteran Convair men. Nolte and Mayes are "junior" with 13 and 15 years service. Crise is "senior" with 30 years, while Baxley, Simpson and Dally all have 26, Button 27, and Bolton 20.

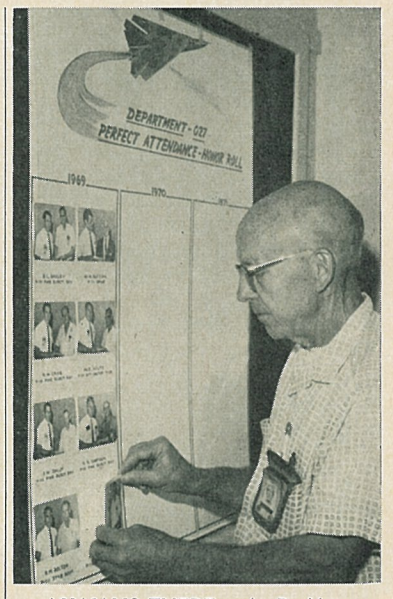
The ceremony was part of a program begun early this year to emphasize regular attendance.

"Absenteeism is a major problem in industry," Rote commented. "We have been giving the matter constant attention in F-111 assembly and results have been gratifying. Attendance records have improved by 50 per cent in the last six months."

To further call attention to those with outstanding attendance, Dept. 027 has created a bulletin board "honor roll" where photos of individuals will be posted.

Paul Veal, manager of industrial relations for Lindbergh Field AF Plant 19, was present for the ceremony and added his thanks.

Others on hand to add congratulations were Steve Persley and Emery "Red" Osgood, both union committeemen.



ALWAYS THERE—A. R. Mayes, Dept. 027 assembler, adds final photo to 1969 "honor roll" established to recognize excellent attendance.

Al Hinck Named To DCASR Post

Albert E. "Al" Hinck, quality control director for the Defense Contract Administration Services Office at Convair, has been appointed chief of the plans and programs division, directorate of quality assurance, Defense Contract Administration Services Region-Los Angeles effective Monday (July 27).

With his transfer, he completes a series of assignments with resident government contract offices at Convair spanning more than 20 years.

He is being succeeded by John Z. Mraz, former chief of the quality assurance engineering branch.

Hinck's first assignment at Convair came in 1950 when he transferred from North Island NAS to the Los Angeles Air Force Procurement Center field office at Lindbergh Field plant as a radio and electrical equipment inspector.

Programs on which he has been involved included B-36, T-29, and F-102 and F-106 aircraft, the Atlas missile, and Atlas-Centaur space launch vehicles. With inception of the Atlas project in the mid-1950s, his primary assignments became space oriented.

Hinck had become a supervisor of government quality control activities for Atlas by 1956 and he had additional responsibility as primary government quality control representative for the Project Mercury "man-rated" program. He has been quality control director for the past five years.

He has been active in the American Society for Quality Control and also has served as vice-chairman of the advisory council for quality control and reliability education for San Diego Community Colleges.

Are You Up-to-Date On Your Designees?

Is your beneficiary and dependent information up-to-date for

- medical and life insurance?
- savings and stock investment plan?
- retirement?

Many employes designated beneficiaries and dependents several years ago and some may have not changed them as circumstances have changed.

Convair people may check beneficiaries and dependents they have designaed by phoning employe benefits, ext. 2657 KM or 430 LF, or industrial relations offices at ETR and VAFB.

Electronics-SD employes may verify their designations by phoning the industrial relations office, ext. 1756 LF.

Technology Study Contracts Awarded

Four space shuttle-related technology study contracts with a combined value of $216,173 recently were awarded to Convair division — three from NASA's Manned Space Center in Houston and one from NASA's Marshall Space Flight Center in Huntsville.

K. D. Whitehead of Dept. 584-0 will lead a study on thermal protection systems under a $93,481 contract, Bernard Kuchta of Dept. 585-0 will be in charge of a loads alleviation control study under a $48,661 contract, and T. J. Chandik of Dept. 591-0 will lead a space shuttle synthesis program study under a $47,060 contract award.

R. G. Huntington of Dept. 585-0 will lead the study on aeroelastic effects on shuttle vehicle dynamics under a $27,511 contract from NASA-Marshall.

Contract Granted for Fabrication of Tanks For Use by NASA

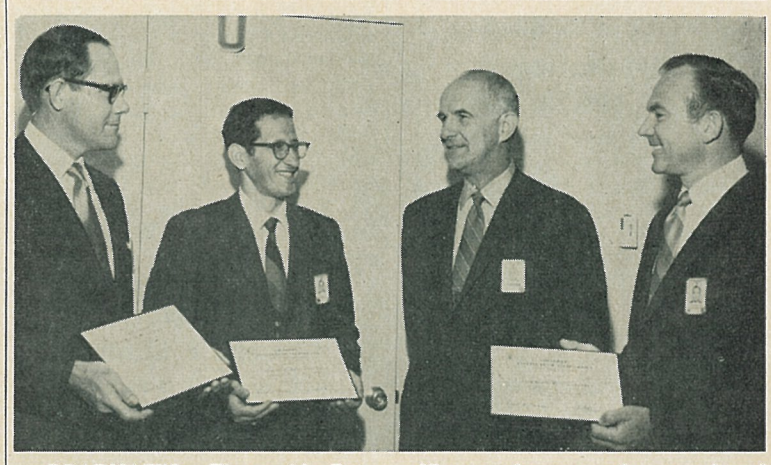
Convair division has been awarded a $356,247 fixed-price contract for fabrication of three stainless steel test tanks for use with liquid hydrogen, methane, and flox (fluorine and oxygen) propellants.

The tanks will be delivered to NASA Lewis Research Center and are to be used with engines in laboratory tests in research and development efforts related to future interplanetary transportation propulsion systems.

Don McHargue, contract administrator, said the liquid hydrogen test tank will be 84 inches in diameter and 76 inches long, the methane test tank will be a 54-inch sphere, and the flox test tank will be elliptic in shape and will be 49 inches high and 69 inches in diameter.

STUDENT EARNS COLLEGE HONOR

Cheryl Mortera, Dept. 400-2, steno secretary, was recently named "Honor Student of the Year" after completing her first year in San Diego College of Business court reporting course.



GRADUATES—Three Air Force officers who recently completed 10-month "Education-with-Industry" program at Convair talk with Jack Bowers, division president, second from right, after receiving certificates. From left, they are Capt. James Sullivan, Maj. Marvin Spallina, and Lt. Col. Emil Kuebler. Kuebler said group wishes to express appreciation to Convair "for the outstanding cooperation and efforts which have greatly increased our knowledge of industrial production and procurement."

It's a Personal Plan

'Scotty' Young Has 'System' For Saving Convair Money

Robert "Scotty" Young, the "Mr. Idea" winner at last month's annual Convair Management Association awards dinner, has a unique personal target for helping Convair division save money.

His goal—and he's considerably ahead of it—is each year during the next three years before retirement to save the division at least as much as his total gross salary will have been during 20 years with the division.

It doesn't take a Scotsman to figure out that's a lot of dollars!

In addition to his being named "Mr. Idea" for his "inquisitive attitude in persistent submittals of high-dollar savings ideas," Young recently received his fifth Gold Star award — more than anyone else in the division—from Jack Hurt, DC-10 program manager, for CRPs and VCPs for a potential $447,000 cost saving on the DC-10 program alone.

He also has savings credited on the C-5 and F-111 programs and recently was awarded one of the division's first five-credit Cost Reduction Achievement pins.

Young is a Dept. 566-2 liaison engineer in the machine shops in Bldgs. 1 and 5 at Lindbergh Field. Early each morning he takes a good look around.

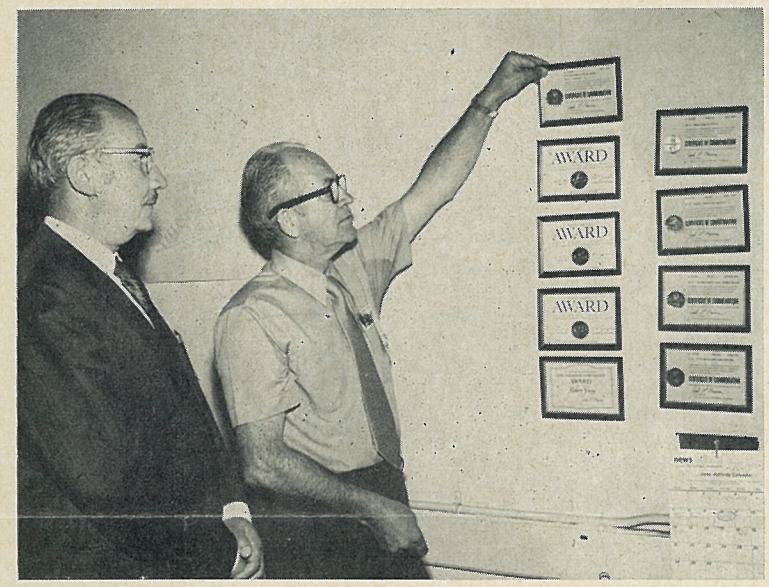
"I'm always on the lookout for ideas," he says. "If someone's having trouble with a job, I try to simplify it. That usually means easier machining work."

Young attributes his resourcefulness and ideas to a value engineering workshop he attended several years ago.

"That training is still with me," he said. "It's been a tremendous asset through the years. And I really enjoy helping Convair. It's my company."

Young was born and reared and had three daughters in Scotland before moving the family to San Diego in 1949 when he was 42.

At Convair he previously worked on design of the C-5, F-111, 880 and 990, and Centaur programs. He's been "on loan" to Lockheed-Georgia for C-5 predesign, Fort Worth division for F-111, and Ryan for the C-142 tilt-wing V/STOL.



IDEA MAN—Robert "Scotty" Young, right, adds another to his collection of Cost Reduction, Value Control, and Employe Suggestion saving certificates as Raymond Chesler, Convair liaison group engineer, watches.

Dozen Tech. Papers Presented By Convair, Canadair People

Twelve scientific papers were presented by Convair division and Canadair Ltd. personnel at the NASA Space Shuttle Technology Conference last week (July 15-17) in Cleveland, Ohio.

Convair papers and authors were:

"Space shuttle structural fatigue considerations" by G. L. Getline and W. H. Schaefer.

"Material properties and allowables for the space shuttle" by W. E. Witzell (and L. K. Crockett of North American Rockwell).

"Space shuttle abort considerations" by C. J. Cohan.

"Space shuttle booster return performance" by R. A. Bithell and W. A. Pence Jr.

"Transitional and turbulent heat-transfer correlation for a lifting entry vehicle at Mach 10" by C. H. Young, D. C. Reda, and A. M. Roberge.

"Nondestructive testing for the space shuttle" by T. J. Delacy.

"Cryogen acquisition and transfer technology review for the space shuttle" by R. E. Tatro.

"Space shuttle staging dynamics" by R. H. Schuett, M. O. Clark, and M. J. Hurley.

"Software integration for integrated electronics" by R. F. Klawa.

"Onboard checkout for redundant systems" by H. L. Newman.

Canadair presentations were on "Crew escape techniques" by F. Marriplis and "Dynamic response of antenna structures in a launch environment" by S. Hayden.

Convair men attending, in addition to those giving papers, were P. M. Prophett, R. A. Nau, F. E. Huggin, E. O. A. Naumann, R. R. Lanflisi, R. A. Lynch, R. E. Martin, F. F. W. Krohn, A. L. Schuler, C. E. Grunsky, W. E. Geudtner, and H. R. Auten.

Pipe Installation Closes Convair Road

The inter-plant road between Convair division's Lindbergh Field plant and Air Force Plant 19 will be closed for 30 to 60 days while city crews install a large drainpipe for use with a pumping system to eliminate flooding of streets and underpasses in the area.

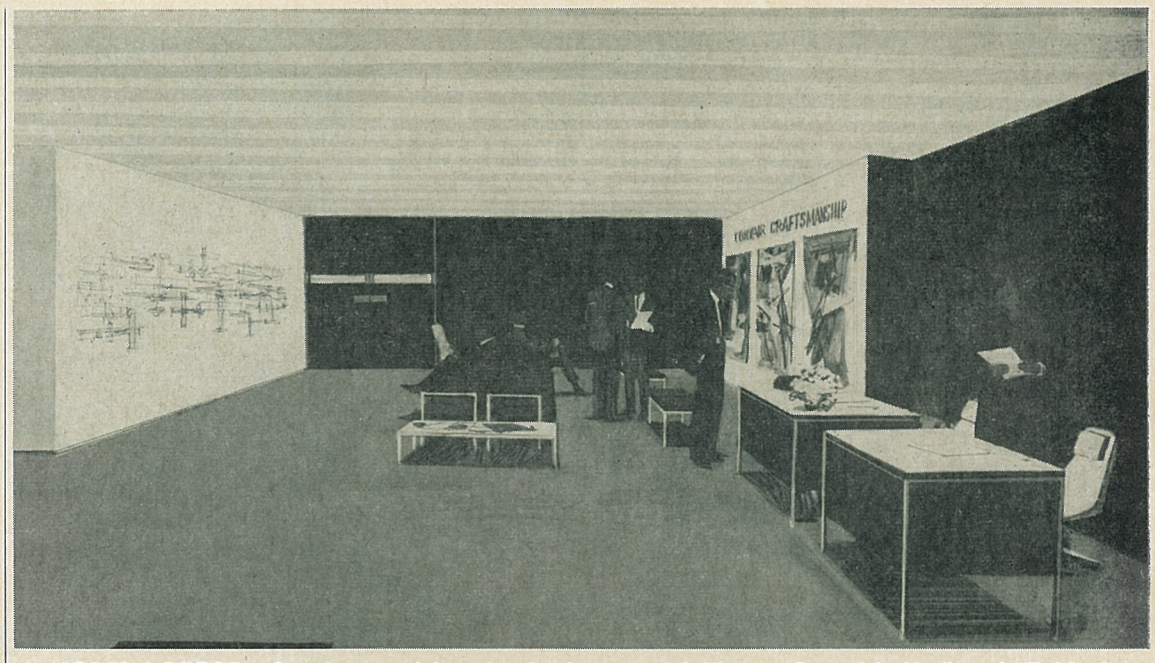
Bus service between the two plants will be provided over city streets with "turn around time" increased from 20 to 30 minutes.

John Speed, general foreman of transportation, said movement of some material between the plants will be permitted over Marine Corps Recruit Depot roads while the inter-plant road is out of service.

Wohl Appointed VP Of Canadair Limited

Canadair Limited recently announced two executive appointments, naming Robert A. Wohl as vice president-administration, and George E. McKusick as vice president-marketing.

Wohl was formerly General Dynamics Corporate director of contracts at New York Headquarters, while McKusick was manager of New York Operations for Lockheed Aircraft.



MODERN DECOR—Spacious and luxuriously decorated lobby at Convair's Lindbergh Field plant, Bldg. 5, is depicted by artist Roy Gjertson. Remodeled reception center will feature craftsmanship displays and murals tracing Convair's past and future and is expected to be complete early next month.

Standards Lab Reps Convene

Andy Woodington, head of the Convair standards lab, and Cal Franklin, supervisor of Electronics-SD engineering test support, represented General Dynamics at the 1970 Standards Lab Conference, June 15-17, in Gaitherberg, Md.

The annual meeting of the National Conference of Standards Laboratories (NCSL), whose theme was "Innovative Metrology-Key to Progress," was attended by nearly 700, representing more than 200 academic, scientific, industrial, commercial and governmental agencies.

During the conference, Woodington served as chairman of the nominations committee and was elected chairman of the organizational committee for the coming year. Previously he served as NCSL national chairman for two terms, 1963-1965, and received the Past National Chairman Award during the conference.

NCSL was established in 1961 by the National Bureau of Standards to promote cooperative efforts from organizations towards solving common problems faced by standards laboratories in business, education and industry.

J. M. Skinner is Pomona division's delegate, W. F. Griffith represents Quincy Shipbuilding division and G. I. Robinson is Canadair's envoy to NCSL.

New Tax Structure Lowers Allowance

There's some "good news" and some "bad news" for employes in the Tax Reform Act of 1969, which went into effect this year.

The good news is that each employe is given a new "low-income" withholding allowance of $200. In other words, he'll pay income tax on $200 less of his income than before.

The bad news is for couples who file a joint return. Although a $200 low-income exemption is allowed for each employe, a couple filing a joint return is allowed only one such exemption.

This means that working couples will likely find an even greater difference between withholding tax deducted and the actual tax they have to pay.

One way to lessen this difference is to reduce the number of exemptions.

This can be done simply, by filling out a new employe withholding exemption certificate and forwarding to payroll section, mail zone 191-10.

Air Force Visitors Given Plant Tour

Twenty-four Air Force supervision students and an instructor from George AFB, Calif., visited Convair's Kearny Mesa plant July 10 for a series of presentations on division and General Dynamics organization, products, and management techniques and a plant tour.

Reception Center at LF Undergoes 'Face Lifting'

Renovation of the reception center in Bldg. 5 of Convair division's Lindbergh Field plant began late last month and is expected to be completed by early next month.

Because first impressions are lasting, Convair officials felt that modernizing the lobby will help put Convair's "best foot forward" for visitors.

Construction includes a completely new interior, lighting, air conditioning and heating, furniture and carpeting. Special features will include a walnut double door leading into the 2nd floor, walnut paneling, craftsmanship displays, and murals created and drawn by Roy Gjertson and Howard Parker, both senior graphic designers in Convair's art and editorial department. The artwork will depict past products and project the future of Convair.

To enhance the decor, there will be modernistic light fixtures, a recessed sprinkler system and the stairway leading to the third floor will be carpeted.

The nearly 1,500 square foot area is more than triple its original size. The five vendor meeting and conference rooms adjacent to the lobby will also be refurbished.

Joe Dragonetti, design and field engineer coordinating the reconstruction project, said the lobby when complete would present an image of obvious excellence to Convair customers and visitors.

Hackett Interiors Systems is contractor for the project with Dept. 250 personnel assisting.

During construction, security receptionist Lillian Truex, and purchasing receptionist Barbara Freeman, are located at the top of the stairway on the 3rd floor.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

(Continued from Page 1)

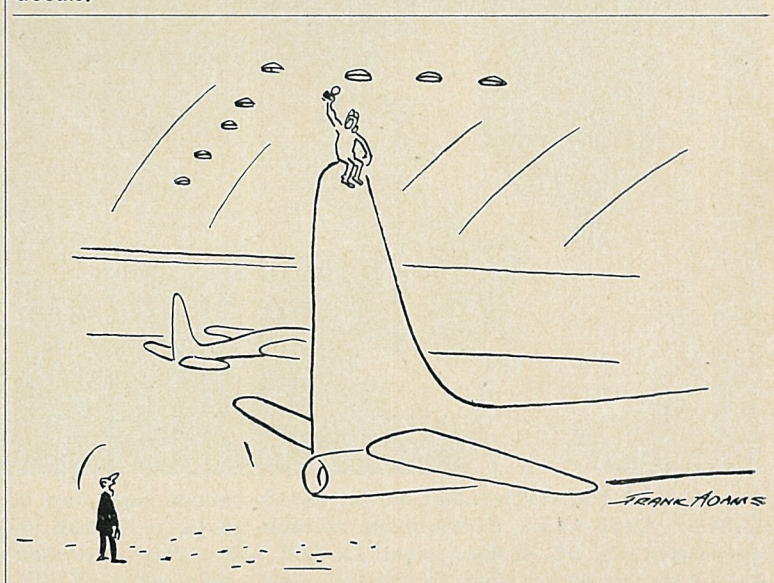
Q—Convair still occupies 2751 Frontier St. Why can't that material be disposed of or moved to the LF plant or AF Plant 19?

A—Convair utilizes approximately five acres of Air Force-owned property on Frontier to store inactive government-owned tooling to support spares for the F-102, F-106, F-111 and C-141 programs. The property is a portion of AF Plant 19 and no monetary advantages would occur through relocation.

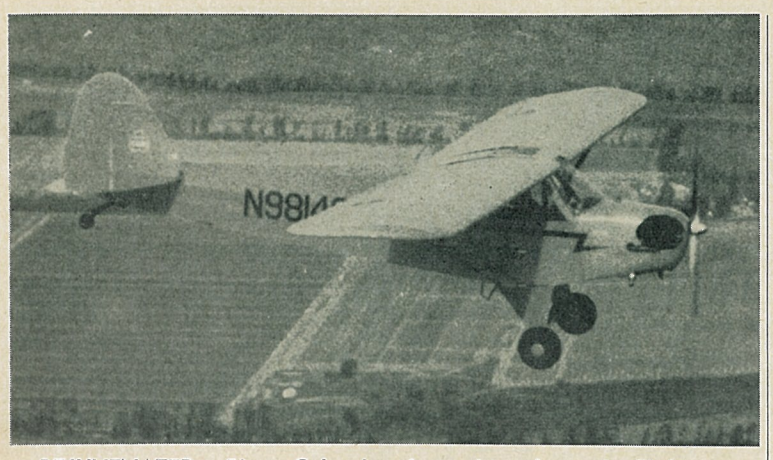
★ ★ ★

Q—City Health Permit decals on some vending machines indicated they expired at the end of 1969. Why did it take months for the permits to be renewed?

A—Permits on all vending machines are renewed approximately six months prior to expiration. However, there may be a period of time before the City Health Department physically attaches the new decals.



"Look, Olson! If you won't use a ladder to change a light bulb, please wear a parachute."



REJUVENATED—Piper Cub, drawing prize, shown in flight.

Restored Piper-J-3 Cub Plane, Drawing Prize, to Be Displayed

An antique Piper J-3 Cub airplane to be given away in an International Aerospace "Hall of Fame" membership drive drawing will be displayed during the next week (July 23-28) at Convair division's Kearny Mesa and Lindbergh Field plants.

Volunteers from the Hall of Fame will sell memberships for $5 and the plane will be awarded in a drawing Sept. 19 at the organization's fifth annual awards banquet.

The J-3 will be exhibited tomorrow and Friday on the helipad at KM and Monday and Tuesday at the northwest corner of Bldg. 4 at LF.

It has been restored and has an airframe time of about 1,500 hours and an engine time of less than 60 hours since major overhaul. Its value is estimated at $3,000.

Col. Edwin Carey Jr., USAF (ret.), a member of the Hall of Fame board, said the membership drive is intended to make the organization self supporting. Membership dues are tax deductible.

The International Aerospace Hall of Fame is located in Balboa Park and honors outstanding contributors to aviation and space programs.

Toastmasters Club Elects F. R. Glick

F. R. Glick of Convair's Dept. 144-1 was installed as president of Convair Toastmasters Club 3745 at a dinner meeting June 24 in the Kearny Mesa plant executive dining room.

Other officers are H. E. Seibert, Dept. 954-0, educational vice-president; T. J. Phillipp, 143-3, administrative vice-president; M. R. Holmberg, 144-4, secretary; Frank Carroll, 144-4, treasurer; W. H. Pfender, 574-1, and C. L. Baker, 192-0, sergeants-at-arms.

H. O. Story, a member of the club and current District 5 governor of Toastmasters International, was installing officer.

R. F. Frederick, also a member of Convair Toastmasters, has been appointed assistant area governor for the organization.

Salvage Schedule

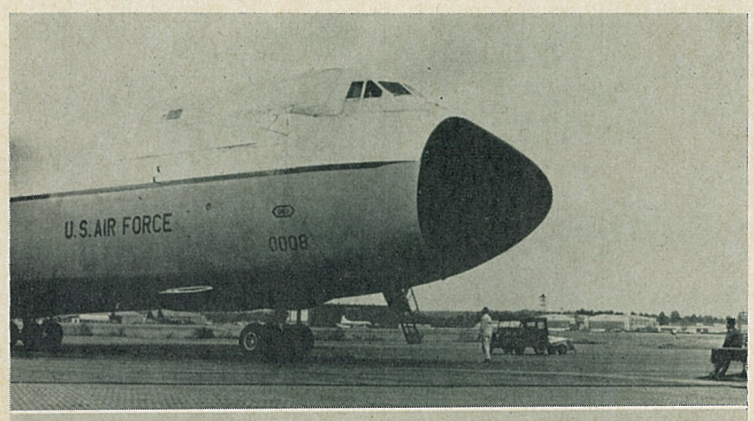
Next employes sales day at the materials salvage yard, Lindbergh Field plant, will be Saturday, July 25. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. Also not permitted are canvas or open-toed shoes and bare feet.

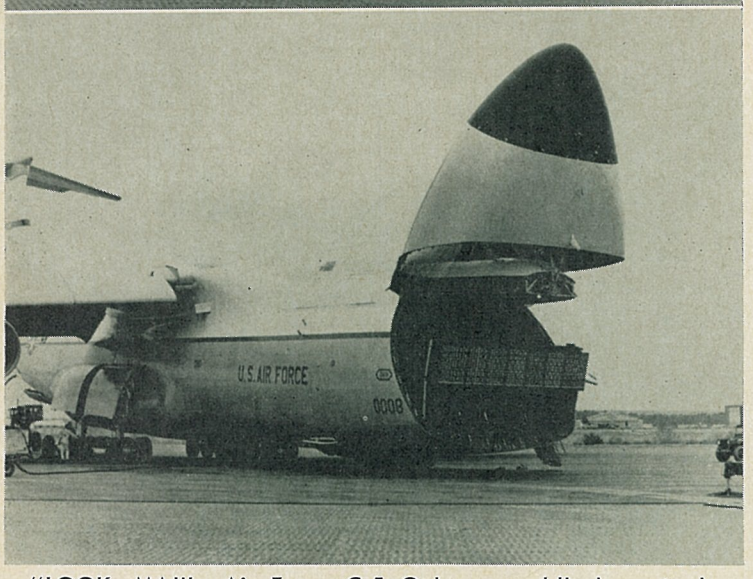
J. E. HALL HONORED FOR COST SAVING

J. E. Hall, an Electronics-SD associate engineer, has been honored for a Cost Improvement Proposal which saved the organization $25,000. The amount of saving was incorrectly reported as $2,500 in the June 24 issue of GD/NEWS.

MRS. SLETNAR'S ROSES WIN AT EXPOSITION

Audrey Sletnar, a department clerk in Electronics-SD's Dept. 566, won first place and best of show ribbons for floral arrangements with a display of roses early this month at the Southern California Exposition in Del Mar.





"LOOK, MA!"—Air Force C-5 Galaxy, world's largest plane, kneels its landing gear and raises its visor nose for offloading of 128 tons of cargo at dock or truckbed level at Charleston AFB, S. C. Top photo shows normal height with nose closed. Convair division builds empennages (tail sections) for the giant craft under subcontract from Lockheed-Georgia Co.

Lockheed to Build Centaur Shrouds

NASA's Lewis Research Center last month announced award of a $9,406,000 contract to Lockheed Missiles and Space Co. for development and production of an improved shroud system for Convair division's Improved Centaur.

The new shroud will be about 14 feet in diameter and 56 feet high to accommodate the 1975 Viking Mars-lander and other spacecraft. The cost-plus-incentive-award contract calls for delivery of six of the shroud systems—one for testing in ground facilities and the others for flight on Titan IIID Centaur rockets of the future.

NASA spokesmen said the new shroud will be designed as a single structure and will be covered by a corrugated aluminum skin. In-flight jettisoning will be accomplished in one maneuver as the clamshell shroud splits in half. Nose fairing and insulation panels are jettisoned separately on the present Centaur D vehicle.

Ind. Engineering Courses Scheduled

Ed Manning, supervisor of resources control for Convair launch vehicle programs, is serving on an advisory board to assist the dean of Southwestern College in Chula Vista in establishing an industrial engineering curriculum.

In addition to providing vocational training for interested college students and industrial employes in the San Diego area, the courses will lead to a Certificate of Proficiency in Industrial Engineering and will be applicable toward the Associate in Arts degree.

The first two courses under the program, "Introduction to industrial engineering" and "Work management techniques," will be offered in fall semester evening classes beginning in September.

Applications for enrollment may be made at the school from 7:45 a.m. to 8:15 p.m. weekdays except Fridays.

Mgt. Assn. Donates Baseball Tickets

Thirty-one deserving youngsters from local Boys' Clubs saw the San Diego Padres play the Los Angeles Dodgers on July 10—thanks to the Convair Management Association.

Tickets used by the youths were single-seat ducats left over from 6,684 sold for the "Convair Management Association Night" game through in-plant sales outlets. This marked the largest single group ticket sale in the history of the Padres.

Paul Green, game chairman for the association, suggested giving the tickets as a goodwill gesture and Charles Stadler, vice president for youth activities, arranged for the ticket distribution through the Boys' Club branch in Linda Vista.

Dynamic Toastmasters Install Ray Eichmann

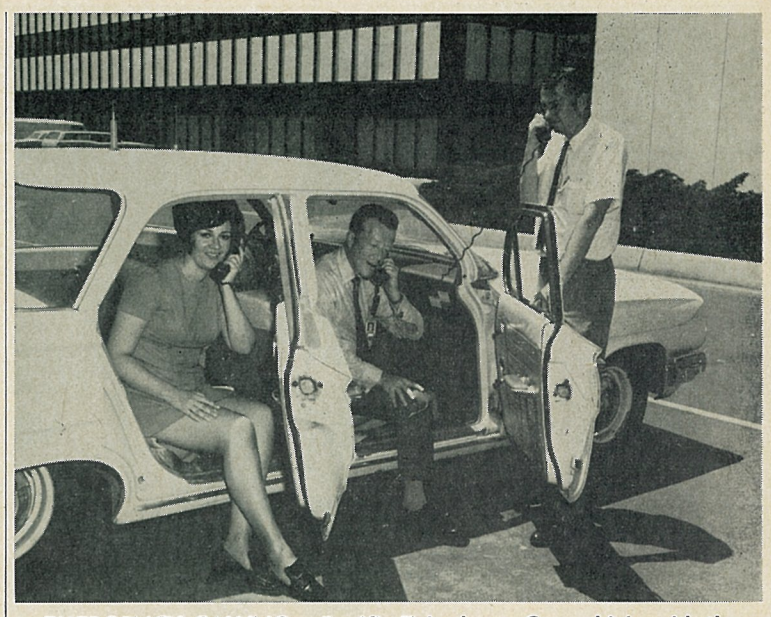
Ray Eichmann of Convair's Dept. 958-4 was installed as president of Dynamic Toastmasters Club No. 457 at a dinner meeting July 9.

Other new officers are Bob Estes, educational vice president; Bill Gordon, administrative vice president; John Gaucho, secretary; Irv Van Horn, treasurer; and Jack Albright, sergeant-at-arms.

Restored Pipe Organ Concert Scheduled

The Fox Theatre's old four-manual pipe organ will be used again for a Jonas Nordwall concert at 9:30 a.m. Sunday (July 26). Donations of $1 will go to a maintenance fund.

Three Convair organ buffs—Bob Lewis, Arch Ellsworth, and Bob Wright—helped restore the organ (GD/NEWS, Dec. 4, 1968) and are helping maintain it.



EMERGENCY CALLING—Pacific Telephone Co. vehicle with three radio telephones was used for outgoing calls from Convair's Kearny Mesa plant June 29 after a construction backhoe severed seven cables (5,800 lines), leaving a large section of the city without phone service. Calling, from left, are Glenda Pettengill, Ralph Williams, and Earl Riley. Destination of outgoing calls ranged from Lindbergh Field and Mt. Woodson to New York and Washington.

Free Ice Skate Session Scheduled by CRA Club

A free ice skating session for all interested General Dynamics families will be sponsored by the CRA Ice Skating Club from 6:15 to 7:45 p.m. tomorrow (July 23) in the House of Ice on Lake Murray Boulevard (70th Street) at Interstate 8. Skates can be rented for 50 cents.

Bud Davies, Ice Skating Club commissioner, said purpose of the free skate party is to remind General Dynamics people that the club skates every Thursday evening year-round at the House of Ice.

Family memberships in the club are $1 per year. Cost for the weekly skating sessions is $1, including skates, for each individual. Free instruction is provided.

Also on the club's calendar of future events is an annual autumn weekend at Big Bear Lake, Sept. 18-20. Wawona Lodge will be leased and those making the outing will have a variety of sporting events available. Reservations will be accepted beginning the last week in August.

Pistol Club Names Top Meet Shooters

Jerry Lehrer outfired Red Schneider to take first in master class in CRA Pistol Club's July 12 match at the San Diego police range. Paul Pemberton and Charley Kropp were winners in expert class in the .22 calibre police course competition.

Winners in the .22 calibre short national course competition were Schneider, Lehrer, Kropp, and Dick Sutton.

In the club's June 28 matches, Schneider and Jim Halfacre were master class winners and Kropp and Lehrer were expert class leaders in .22 calibre police course firing.

In .45 calibre short national course competition, Kropp was first, Lehrer was second, Harry Black was third, and Halfacre was fourth.

Garden Club Show Reaches Voting Age

Convair Garden Club's summer show will "come of age" July 26 with the 21st annual dahlia show in the Floral Association Bldg., Balboa Park. Admission is free for the 1-6 p.m. exhibit.

In addition to the expected 2,000 dahlia blooms adding color and fragrance to the show, displays of vegetables, flower arrangements, corsages and children's division entries will be featured.

Entries are open to all GD employes and members of their families and will be accepted from 7-11 a.m. on the day of the show.

EICHMANN, RILEY WIN FRIDAY BRIDGE EVENT

Ray Eichmann and Jack Riley placed first July 10 in CRA Bridge Club Friday night play. They also placed fifth June 21 in American Contract Bridge League competition.

Vicki Jensen Wins National Net Title

Vicki Jensen, 13, daughter of Henry S. Jensen, Convair Dept. 401, recently competed in the 23rd annual National Junior Hardcourt tennis championships at Burlingame, Calif.

She defeated Marna Louie of San Francisco 2-6, 6-2, 6-2 to win the singles division 14-year-old title and teamed with Kathy May of Beverly Hills to win doubles championship.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 KM. Deadline for next issue of GD/NEWS is July 28. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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BADMINTON—Play 7-10 p.m., Mondays, Federal Bldg., Balboa Park.

BRIDGE — Duplicate bridge sessions, 7:30 p.m. each Friday.

CHESS—Play 7 p.m. July 29.

CHORUS—Rehearsals 7:30 p.m., Mondays.

COUNTRY & WESTERN MUSIC—Meet 7:30 p.m. Thursdays, CRA Missile Park picnic shelter.

FENCING — Workouts and instruction 7:30-10:30 p.m., Fridays. YWCA, 10th & C Sts.

GARDEN CLUB—Annual Dahlia show July 26, 1-6 p.m., Floral Association Bldg., Balboa Park.

GOLF—Coronado tourney, Aug. 1-2, 7 a.m. tee-off time.

GUN CLUB—Fun shoot, 9 a.m., July 26, Gillespie Field gun range.

HEALTH CLUB—Open 9:30 a.m. - 10 p.m., Monday through Thursday; 9:30 a.m. - 9 p.m., Fridays; 10 a.m. - 5 p.m., Saturdays; "Women only" weekdays, 9:30-11 a.m.

ICE SKATING — GD family FREE skate night 6:15-7:45 p.m., July 23, House of Ice, Interstate 8 and Lake Murray Bldg. Skate rental fee 50 cents.

MINIATURE RAILROAD — Operating sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions 7 p.m., each Wednesday, CRA Missile Park.

PISTOL CLUB—Club shoot 9:15 a.m., July 26, San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RIFLE CLUB—Senior shoot 7 p.m., tonight (July 22). Junior shoot 9 a.m., Aug. 1. Gillespie Field Range.

ROADRUNNERS—Meeting 7:30 p.m. tomorrow (July 23), Gillespie Field Clubhouse.

ROCKHOUNDS — Summer schedule Tuesdays, 7-9 p.m.; Saturdays and Sundays 1-4 p.m.

SAILING—Meeting 7:30 p.m. tonight (July 22).

SKI CLUB—Meeting 8 p.m., Aug. 4. Water skiing on Mission Bay Thursday evenings and Sundays.

SPECIAL EVENTS—CRA-Management Association annual picnic 11 a.m. - 5 p.m., Aug. 9 at CRA Missile Park.

SQUARE DANCE—Dance 8-10 p.m., Thursdays.

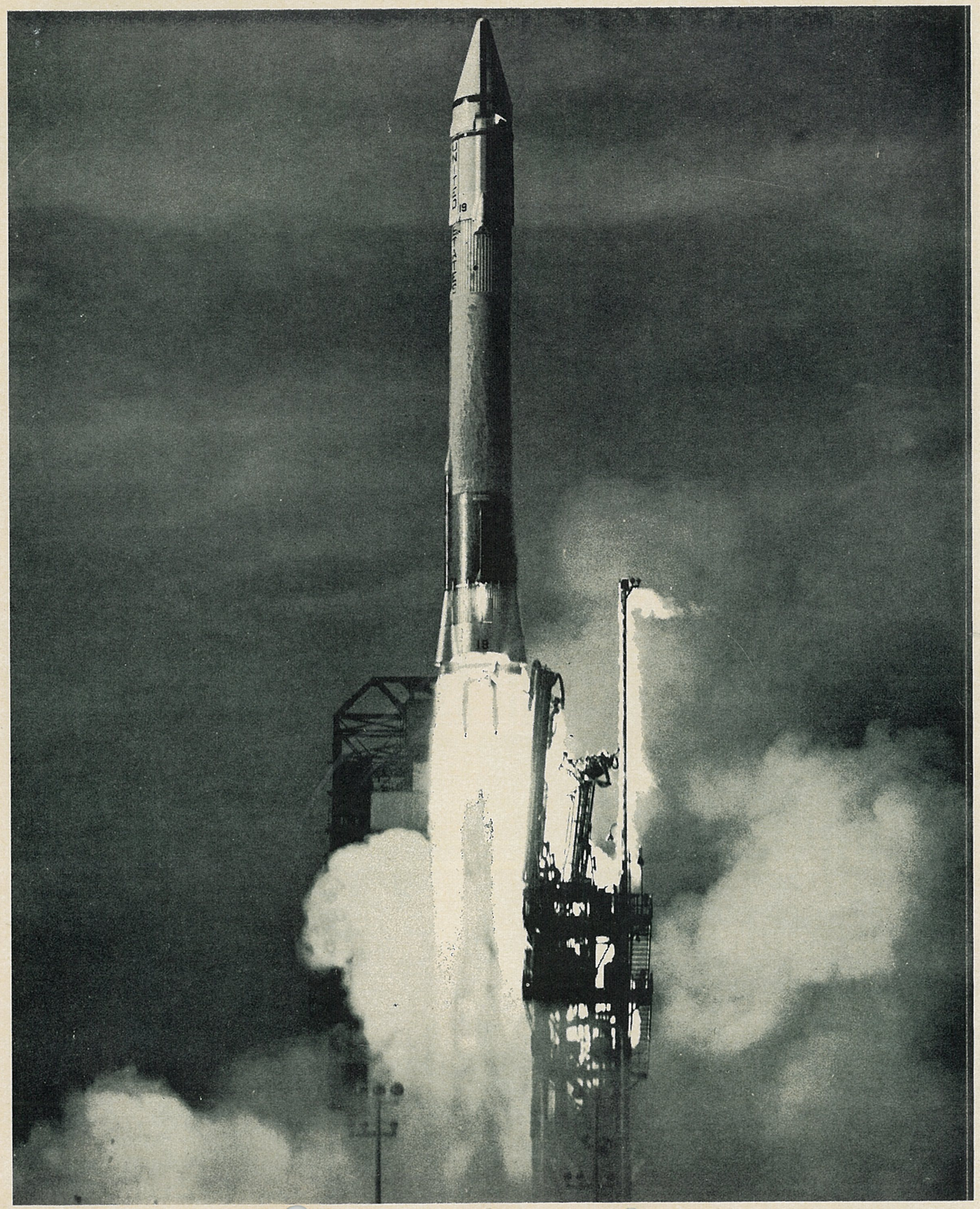
STAMP CLUB — Meeting 7:30 p.m., July 28.

SWIMMING—GD family swim night 7-9 p.m., Aug. 15, Mission Beach Plunge. Tickets at employe benefits, 5 cents.

TOASTMASTERS—Convair Toastmasters meet 4:30 p.m., each Wednesday. Dynamic Toastmasters meet 5:30 p.m. Thursday.

TRAILERS—Meeting 7:30 p.m., Aug. 4.

WOMEN'S GOLF—Coronado tourney, tee-off time 8 a.m., Aug. 8.



It will keep on outdoing itself through the 1970's.

General Dynamics will probably build a more versatile space vehicle one day. But right now, our Convair division's Atlas-Centaur stands all alone in bringing off the tough, varied jobs assigned to it.

Designed as an ICBM

Versatility was bred into Atlas from the start. Developed as an ICBM, it proved capable of launching human payloads —the Mercury astronauts—into earth orbit years ahead of any other U.S. booster.

In all, Atlas has logged more than 380 launches. And with Centaur, the nation's first high-energy upper stage, it has thrust seven Surveyors to the moon and two Mariners toward Mars.

With a record like this, Atlas-Centaur has now been selected to boost the INTELSAT IV series of communications satellites into orbit beginning in 1971.

What's next?

Proved reliable, accurate and cost effective, Atlas and Centaur, working together or in combination with other launch vehicles or upper stages, will boost new astronomical satellites into earth orbit, send interplanetary missions to Venus, Mercury and Mars, and send the first U.S. spacecraft to Jupiter.

General Dynamics' commitment to continuing work on a variety of space programs includes not only Atlas and Centaur, but scientific satellites, reusable space transportation, space experiment modules, and expandable space antennas as well. At General Dynamics we put technology to work solving problems from the bottom of the sea to outer space...and a good bit in between.

GENERAL DYNAMICS

1 Rockefeller Plaza, New York, N.Y. 10020

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 23, No. 15 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, August 5, 1970

UNDER POWER—DC-10 "rolled out" for large crowd of guests at McDonnell Douglas Long Beach, Calif. facility July 23 but perhaps that is misnomer. "Taxied" would be more accurate, for aircraft emerged under own power.

Convair's Marketing Setup Strengthened

E. J. Hopley, director of new product development for Convair since 1968, has been named director of marketing for the division.

Lyman C. Josephs, vice president and general manager, said Hopley will take the lead in formulating marketing plans and strategy and will direct establishment of marketing campaigns except in space programs and launch vehicle programs areas.

E. J. Hopley

Before joining Convair in 1968, Hopley served as president of Management Recruiters Inc. of Cincinnati and Boston. He was director of marketing and vice president-marketing for Avco Corp. from 1958 to 1966.

James Woolnough, Gordon Siegel, and Thomas Sullivan have joined the new marketing organization (Dept. 105-0) as marketing managers for military programs.

Woolnough has responsibility for Air Force programs, including full-time initial effort on the A-X program. Siegel will seek new business opportunities from the Army and Navy. Sullivan will concentrate on sale of tilt-wing V/STOL aircraft based on the Canadair CL-84 concept and will be responsible for Marine Corps and NASA marketing contacts.

Kenneth F. Hallinan is marketing manager-commercial aircraft programs and Ted Laven is marketing manager-international. Both will handle aircraft modification and other new-business opportunities.

J. W. Petre has transferred from engineering as marketing manager-marine systems and L. E. Roby as marketing manager-information systems.

Paul Bazler has been transferred from the DC-10 program to be manager-logistics support with responsibility for integrating activities of customer service, field service, and spares support functions.

B. J. Simons is technical advisor to the director and continues to maintain liaison on commercial aircraft programs. Carl Coverston is manager-marketing engineering, providing customer service relating to route studies, airline economic analysis, and equipment comparison.

Art Perry has transferred from the market analysis and planning department to coordinate the handling of requests for proposals and quotations. He will be assisted by Nick Durvis, administrative coordinator, on matters pertaining to financial control.

"The marketing department's prime responsibility will be to determine customer requirements and the means by which we can best meet them," Hopley said. "We will be working closely with all other departments within the division and with each of the General Dynamics field offices both domestically and internationally."

Picnic to Feature Food, Entertainment

Tickets are still available for the Convair Management Association and CRA annual picnic set for 11 a.m. to 5 p.m., Sunday, Aug. 9, at Missile Park.

Available through all boosters, employe benefits, and CRA outlets, tickets are $1.50 for adults and $1 for children under 12.

Special features include, barbecue beef dinner, the Julian Gunfighters, stage shows, adult and children games including "mature men's prettiest leg" contest, dancing to Trust, a teenage rock band, "Big E" Elvin Hayes, San Diego Rockets basketball star, volunteer "executive" dunking, "jump for joy" airlock balloon, door prizes, and much more.

DC-10 Taxi Tests Follow Roll-out

The first McDonnell Douglas DC-10 tri-jetliner, with a 20-foot-wide Convair division-produced fuselage, was unveiled for more than 1,300 guests in colorful roll-out ceremonies July 23 in Long Beach.

Vice President Spiro T. Agnew, guest speaker, joined Donald Douglas and James McDonnell in advancing three DC-10 throttle levers as a signal for the first DC-10 to taxi from the final assembly hangar under its own power.

The craft now is undergoing taxi tests in preparation for maiden flight in September. It

(Continued on Page 2)

NEWS Will Omit Issue of Aug. 19

(See Page 3)

Proposal for A-X Reviewed

Convair division's proposal to develop a prototype of the A-X specialized close air-support aircraft is scheduled for delivery to the Air Force late this week.

Convair is one of a number of firms submitting proposals to the AF Systems Command's Aeronautical Systems Division, Wright-Patterson AFB, in response to an RFP **(GD/NEWS, May 27, 1970).**

Review of Convair's proposal was conducted at San Diego in mid-July with representatives from three other General Dynam-

(Continued on Page 2)

CONVAIR CARE—Frank E. Macalello, a Convair skin and structures assembler, uses care in riveting panel in C-D section for DC-10 fuselage. EZ Duzit program stresses care in fabrication and handling of fuselage skins.

Success of EZ-Duzit Approach Reflected in DC-10 Skin Quality

John C. Brizendine, McDonnell Douglas vice president and DC-10 program general manager, said airline representatives have been impressed with the quality of skins in fuselage sections being delivered by Convair.

He credits appearance of the skins to careful handling by all agencies involved from time of raw material production through final assembly.

Convair DC-10 personnel say the division's EZ Duzit program and action by a skin quality committee in establishing processing and handling procedures have helped the division deliver "near perfect" premium-quality skins for the tri-jet fuselages.

EZ Duzit reminders are placed in DC-10 skin processing areas and on all carts on which the skins are transported.

Twenty special skin handling classes have been held since October for 366 employes who are concerned primarily with DC-10 fuselage-skin handling and proc-

(Continued on Page 2)

CLOSE SCRUTINY—Members of evaluation team reviewing Convair division's proposal to develop A-X prototype pause briefly in session.

SERVICE HONOR—R. C. "Sparky" Sebold, right, veteran General Dynamics engineering executive and now a Convair division consultant, recently was presented diamond-studded tie clip for 40 years service to company by Jack Bowers, left, Convair division president. Helping show off award is Mrs. Liz Gerding, Bowers' secretary and Sebold's former secretary. Sebold joined Consolidated Aircraft Corp. in Buffalo, N.Y., in 1929 and has had prominent role in Convair engineering achievements.

Log Book Entries

Awards
CONVAIR

Employe Suggestion awards approved for week ending July 17:

K. R. Bailey, Dept. 507-0, $25; S. W. Botta, 985-1, $46.30; H. L. Boyd, 250-4, $79.10; C. J. Collins, 250-1, $63.80; L. V. Davis, 149-8, $80; B. Hahn, 149-8, $15; V. F. Hirsch, 143-1, $15; L. E. Johnson, 142-1, $98.25; B. Z. Kodger, 836-1, $60; W. G. Lux, 144-1, $711.10; E. V. Marikle Jr., 507-0, $23; J. B. Medina, 131-5, $15; A. R. Meyers, 046-0, $15; I. E. Paulis, 553-4, $15; P. C. Pond, 780-1, $15; J. W. Quijada, 142-1, $15; I. J. Romero, 142-1, $98.25; S. Smolka, 015-0, $15; H. N. Sylvester, 512-3, $15; T. L. Trammell, 507-0, $25.70; R. J. Zenger Jr., 518-0, $15; J. Zoll, 144-1, $38.50.

Employe Suggestion awards aprpoved for week ending July 24, 1970:

D. G. Boyer, Dept. 562-2, $35.80; W. W. Dover, 250-1, $25; J. B. Levack, 780-2, $30; N. E. Melber, 572-3, $42.30; E. P. Norcross, 979-3, $15; G. H. Reichley, 979-1, $15; R. L. Rondeau, 979-3, $264.80; H. W. Schleibaum, 250-1, $23.20; H. M. Urbach, 572-0, $50; O. S. Williams, 170-2, $53.30.

Invention Disclosures
CONVAIR

BRACKA—B. W., Dept. 511. Means for positioning and supporting a double-slotted wing trailing edge flap.

CRABTREE—H. E., HASTINGS, H. J., Dept. 985. Linear footage counter.

MINANDO—W., Dept. 195. Smoke and trash disposal system.

ROGERS—S., WOODS, E. R., Dept. 550. Compensation of shunt reactance in a transmission line.

WHITE—W. K., Dept. 553. Process: integrated circuits.

"Cost Reducers"
CONVAIR

Cost Reduction Achievement pins presented:

Five-credit pins—C. J. Collins, Dept. 250-1; R. W. Sanger, 507-0; W. S. Betts Jr., 584-0; E. L. Wright, 202-0; E. V. Marikle Jr., 507-0; H. R. Van Hoose, 149-6.

Ten-credit pins—A. R. Anderson, Dept. 027-0.

Fifteen-credit pins—W. G. Lux, Dept. 144-1.

Retirements
CONVAIR

BATES—William A., Dept. 401-5. Seniority date April 16, 1951, retired July 20.

DELLA TORRE—John A., Dept. 143-3. Seniority date April 22, 1957, retired July 2.

HOUSE—Willard B., Dept. 031-0. Seniority date July 6, 1970, retired July 6.

PATTILLO — Robert O., Dept. 810-0. Seniority date Aug. 1, 1951, retired June 30.

PRESLEY—Otis N., Dept. 400-2. Seniority date June 4, 1952, retired July 16.

SOMADGE—Joseph J., Dept. 518-0. Seniority date Feb. 6, 1963, retired July 10.

STOLL—Edward L., Dept. 146-4. Seniority date Jan. 5, 1959, retired June 7.

THOMAS—Charles S., Dept. 145-0. Seniority date Nov. 3, 1959, retired June 29.

WILLIAMS—Albert N., Dept. 031-0. Seniority date July 16, 1941, retired July 17.

WITKOFF—Samuel, Dept. 149-1. Seniority date Feb. 24, 1943, retired July 2.

WRONSKI—Conrad, Dept. 172-2. Seniority date April 28, 1959, retired July 18.

Rider-Driver
CONVAIR

RIDE WANTED — From Nile St. in North Park to Lindbergh Field plant, 8 a.m. to 4:45 p.m. shift. Call Marea McGregor, ext. 2058 LF.

RIDE OR CAR POOL WANTED — Mira Mesa area to Lindbergh Field plant, 7:30 to 4:15 shift. Call Dennis Millard, ext. 1842 LF or (home) 271-0639.

Personals
CONVAIR

I deeply appreciate the kind thoughts and wishes extended to me on the occasion of my retirement.

Larry Sweeney

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

DC-10 Taxi Tests Follow Roll-out

(Continued from Page 1)

carries the identification logotypes of 12 airlines that have placed orders and options for 214 of the multi-range transports.

Other officials at the rollout included Gov. Ronald Reagan; Grant Hansen, assistant secretary of the Air Force for research and development; James Beggs, undersecretary of the U.S. Department of Transportation; John Shaffer, FAA administrator; several congressmen; and military and airline executives.

Convair division representatives included Jack Bowers, president; Lyman Josephs, vice president and general manager; James Mason, communication director; J. M. Adamson, director of manufacturing; and Jack Hurt, DC-10 program manager.

After the DC-10 taxi - out, boarding stairs were rolled up to forward and aft cabin doors and stewardesses from each of the purchasing airlines disembarked to form parallel welcoming lines for boarding guests. Those inspecting the DC-10 indicated they were impressed by the wide and airy interior of the Convair-built fuselage.

Convair division provides five fuselage sections measuring 128 feet for each DC-10—all but the nose and tail of the giant fuselage.

The Convair task, which includes design responsibilities as well as production, will have a value of about $500 million by 1975. Peak employment on the program is expected to be about 4,000. About 2,750 employes are presently assigned to DC-10.

Convair completed delivery of fuselage sections for the first five DC-10s last month and the C-D section for the sixth plane was scheduled for delivery yesterday. Fuselage for the 10th plane is already under fabrication and scheduled for November delivery.

The second DC-10 is structurally complete at Douglas and has been undergoing proof testing.

Four basic models of the DC-10 are scheduled. The initial Series 10 is designed for 300 to 3,600-mile domestic routes. Series 20 and 30 intercontinental models will carry 270 passengers up to 6,100 miles non-stop. The convertible DC-10F will carry either passengers or 158,000 pounds of cargo over intercontinental routes.

Proposal for A-X Reviewed

(Continued from Page 1)

ics divisions as well as Corporate Headquarters joining in the critique.

W. W. Fox heads the proposal effort as program director. Herbert Rogers of Fort Worth division headed the proposal review with J. P. Woolnough and J. G. Basquez of Convair coordinating.

Joining in the review were K. E. Van Every, Corporate Headquarters, Fred Petty, Washington Office, Jack Kirby, Fort Walton Beach, Charles Robards, Dayton Office, Buzz Henderson, Langley Field, George Troutman, Washington.

From other divisions were James Johnson, Al Laureyns, Dave Halsey, Ben Carrol and Robert McMichael, Fort Worth; Rex Warden, Pomona; Robert Blanchard, Electronics.

Convair team members included: Ralph Bayless, John Wild, L. A. Payne, E. W. Boteler, W. T. MacCarthy, C. E. Coverston, Mike Dublin, Abe Hurlich, R. L. Benson, L. E. Lightbown, E. D. "Sam" Shannon, F. A. Stephenson, B. J. Simons, W. T. "Bill" Dorrance, Orison Wade, H. G. Nulton, H. P. Williams, W. L. Johnston, C. K. Anderson, W. F. "Bill" Chana, T. M. Sullivan, L. E. Shea, J. J. Jodka, J. M. Cooper, O. W. Harper, R. E. Sommers, D. F. Houtz, F. D. "Dan" Applegate, J. S. Bergstrom, W. E. Wise, J. M. Adamson, B. J. Neal.

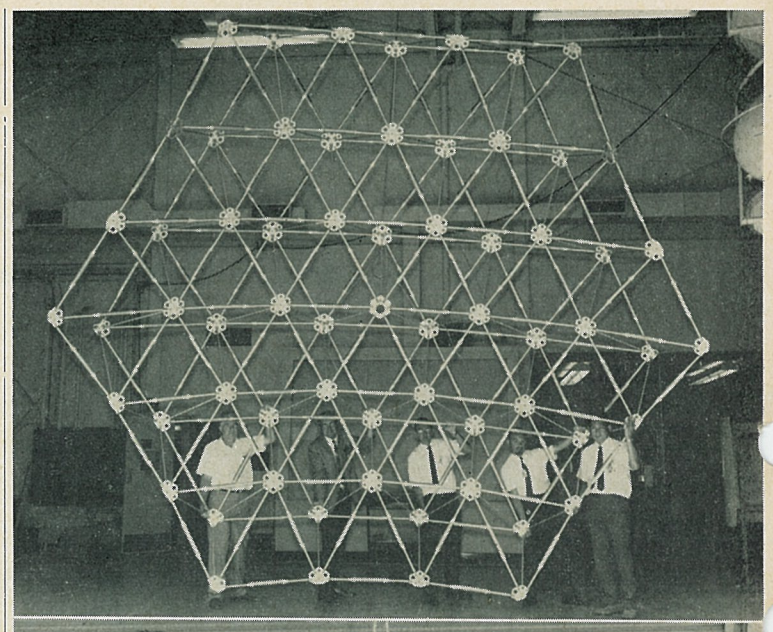
Cook Will Head NMA Council

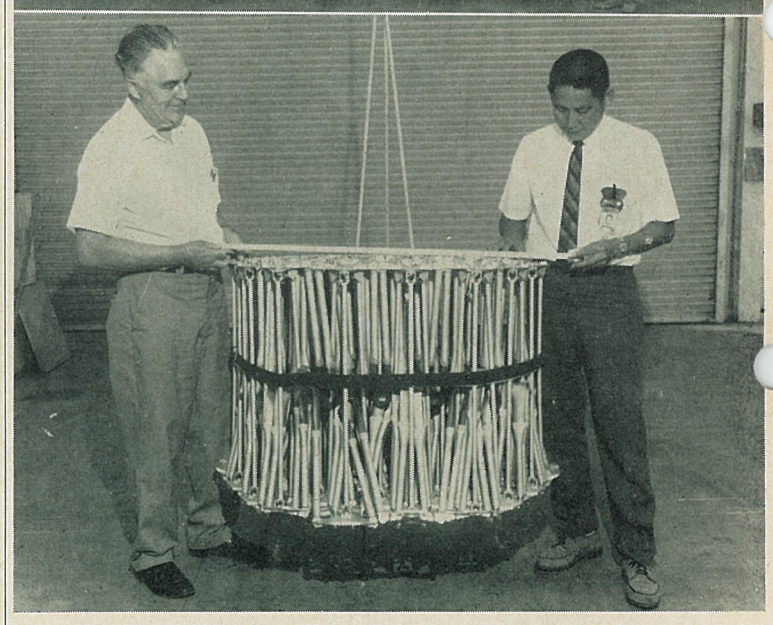
General Dynamics Management Clubs will be well represented in the San Diego Area Council of National Management Association Clubs for the coming year.

Installed at a recent laua held at Atlantis were J. E. "Jess" Cook of Convair's reliability control as president, J. E. "Gene" Lauen of Convair's special programs as secretary and R. C. Anderson of Stromberg DatagraphiX as treasurer.

The San Diego Area Council, consisting of representatives from seven San Diego area Management Clubs, provide communications between area clubs in sharing ideas and setting up joint training courses and seminars.

"It's a political problem . . . some won't work on the 'right wing' and some won't work on the 'left wing.'"





INSTANT ANTENNA—Expandable-truss antenna developed by Convair for NASA for use in demonstrating TV reception from satellites in foreign countries is measured (lower photo) by Karl Busch and Wallace Akimoto before being deployed. Holding antenna for size comparison in top photo, from left, are Busch, John Fager, Jim Stracham, Desmond Vaughan, and Akimoto.

Self-Erecting TV Antenna Will Be Shown in Brazil

A 15-foot-diameter self-erecting ground antenna, patterned after patented concepts for antennas that will unfold themselves in space, has been designed and fabricated by Convair division for NASA's Goddard Space Flight Center.

John Fager, Convair Dept. 501-3 advanced systems project engineer, said the antenna is expected to be used during the next few years in India and South American countries to demonstrate TV reception from satellites.

The 87-pound parabolic expandable-truss antenna, considerably heavier than would be needed in space, is designed to operate in 30-mph winds. It can be deployed quickly and repackaged for shipment in about 45 minutes.

Three pounds of gold-plated chromel-R mesh will be used to form a reflective cover over the antenna truss structure before it is delivered to NASA this month.

Fager said the expandable-truss antenna is expected to be used first in Brazil in a demonstration of satellite communications for a domestic communications system.

It also is expected to be used in India to demonstrate educational TV reception from Application Technology Satellites (ATS) F and G.

ATS-F is scheduled for launch in 1973 and will be placed in synchronous orbit over the Indian Ocean. ATS-G, planned for 1975 launch, will be positioned over South America.

One of the potential uses of synchronous-orbit satellites is in providing educational TV for receivers at village "schools" over wide areas of various types of terrain.

Wallace Akimoto, a Dept. 541-0 senior electronics engineer, was project manager for the antenna development.

Karl Busch, model builder in Dept. 517-0 at Lindbergh Field and a 27-year Convair veteran delayed his retirement until July 31 so he could complete assembly of the structure. He previously had assembled three other expandable-truss antennas.

The self-erecting antenna concept, developed several years ago by Desmond Vaughan of Dept. 512-2, uses a series of light metal spars that will bend, springs, and "spider" hinges for compact packaging and expansion when released.

Fager said a manual is being prepared to show how the antenna is to be released for use and repackaged for shipment.

Success of EZ-Duzit Approach Reflected in DC-10 Skin Quality

(Continued from Page 1)

essing. Will Weidenfeller of educational services is coordinator.

J.S. Bryant, group foreman in DC-10 assembly Dept. 046 at Lindbergh Field has been a member of the skin quality committee since it was formed and has helped implement processes recommended by the committee to maintain premium-skin quality.

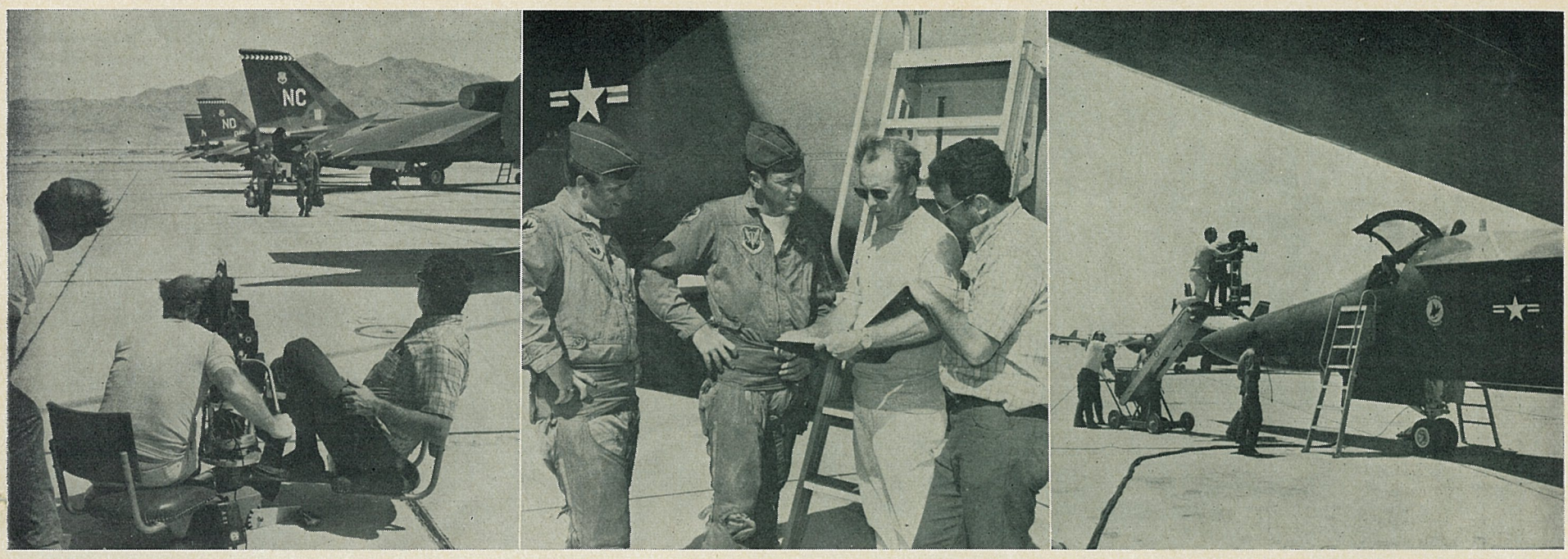
In addition to careful handling techniques employed, the skin material is covered with protective coatings as it is processed at Convair.

Several airlines will be using DC-10s without exterior painting —making exterior appearance of primary importance.

Jack Hurt, DC-10 program manager, said fuselage skins for the DC-10 are the most expensive on which the division has worked.

"Our objective is to deliver DC-10 skins that will be the prettiest in the sky, on schedule, without a scrape or scratch, and at lowest possible cost," he said.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.



"FALCON" FLIERS—Filming of "St. George and the Black Falcons" is shown at Nellis AFB, Nev. In left photo, Lt. "Doug" Stenberg and Maj. "Sandy" Marquardt return from an F-111 training mission. At camera are Chuck DeMund, director John Hynd, and Bill McClure. Center photo shows Lt. Stenberg, Maj. Marquardt, Hynd, and McClure discussing sequence to be filmed. Maj. Marquardt is in F-111 cockpit in right photo as Hynd and McClure operate camera and DeMund, Bill Carter, and Bill Woods handle crane. Due for release in September, film is being produced for General Dynamics and the Air Force.

Keel For First Lykes Ship Laid

The keel for a revolutionary type of barge-carrying cargo ship, the Doctor Lykes, was laid July 15 at Quincy Shipbuilding division.

She is the first of three in a new class, known as "Seabee" ships, being built for Lykes Bros. Steamship Co., Inc., of New Orleans, La., a wholly-owned subsidiary of the Lykes-Youngstown Corp.

At 875 feet in length and displacing 50,900 long tons fully loaded, Doctor Lykes is the largest cargo transport ship in the world.

She is the Quincy Shipbuilding division's first commercial vessel since the yard was acquired by General Dynamics in 1964.

Doctor Lykes is 106 feet wide and will carry 38 fully loaded barges containing a total of 24,500 long tons. Lykes Bros. plan to use the ships Doctor Lykes and the succeeding ships in the class on their Gulf-Continental Europe/United Kingdom trade routes.

Doctor Lykes is scheduled to enter service in 1972. The keels for the follow-on ships, Tillie Lykes and Almeria Lykes, will be laid in 1971.

In a brief early morning ceremony, Mrs. Frank A. Nemec, wife of the president of Lykes Bros., placed her initials on the first steel keel section of Doctor Lykes. Immediately after, as part of the new construction techniques being used at Quincy, two other prefabricated and pre-outfitted steel sections, each weighing nearly 100 tons, were lowered into place by huge cranes.

Principal speaker at the ceremony was Congressman Hastings Keith (R-Mass.).

He called the ships "symbolic of the new U.S. Merchant Marine program proposed by President Nixon and now being finalized by Congress."

Rep. Keith explained that pending legislation would authorize a $3 billion commitment to build at least 300 new American ships in United States shipyards in the next 10 years. Praising the Quincy Shipbuilding division management and labor for the high quality ships delivered to the Navy, Congressman Keith said the new commercial shipbuilding program was a "partnership of government and private industry."

He said "to build commercial ships at a profit, American shipyards will have to become more efficient by means of new and better facilities, better planning, greater cooperation at every level and, most important, greater productivity."

Frank A. Nemec, who in 1964 conceived the idea of the barge-carrying ships, said that the three ships bring to 36 the number of new cargo carriers ordered by Lykes since 1960. He emphasized the importance of the Seabees as "a new means of transportation which will be felt in foreign trade as well as in unlocking the natural resources of Alaska and the Arctic regions."

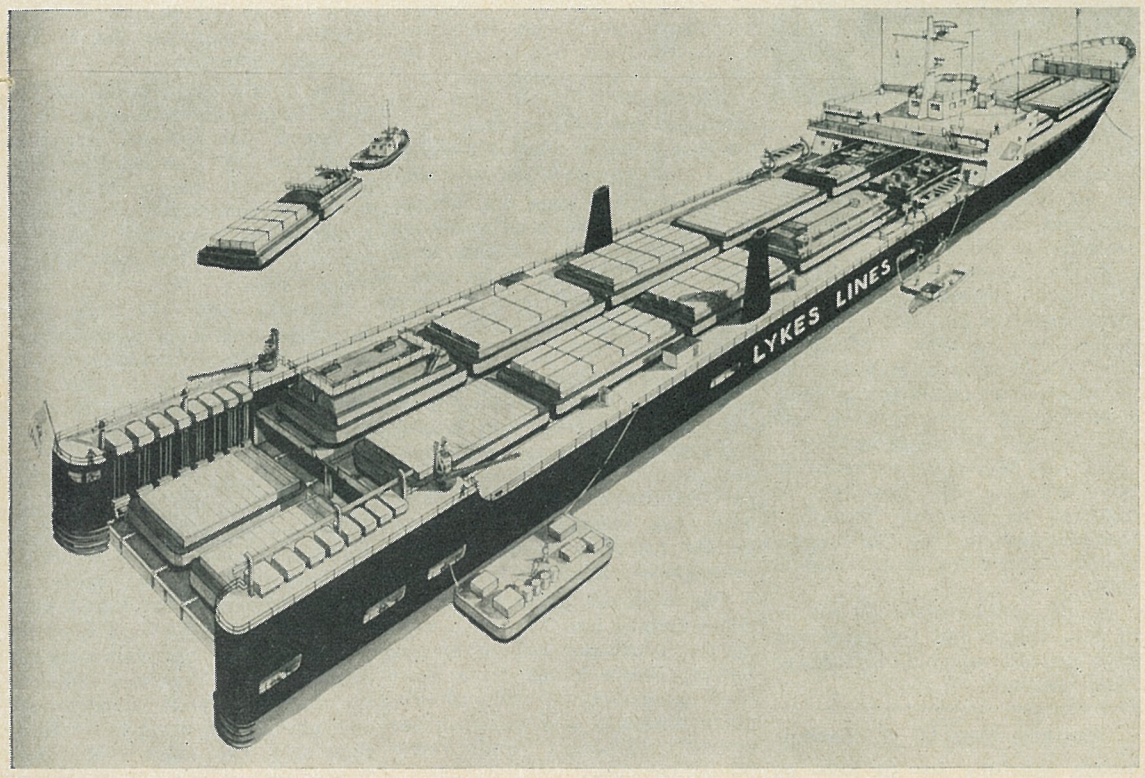
Pointing out the unique, self-contained elevator which can lift 2,000 tons, Nemec said: "The new ship encompasses the advantages of the container ship, the roll-on, roll-off ship, the break bulk carrier and, to some degree, the small tanker." He added that the barge-carrying concept makes it possible to load and discharge rapidly without extensive shoreside facilities and thus save many hours and reduce transportation costs.

Nemec said that traditionally a keel laying is regarded as the beginning of a ship, but in this instance it marked "the end of a dream." The Seabee concept is now a reality he said.

Maritime Administrator Andrew E. Gibson repeated President Nixon's commitment to rebuild the United States Merchant Marine and expressed alarm that little appreciation has been shown for sea power in the past decade.

He blames the dependence on World War II vintage ships, nearly all of which are either obsolete or on the verge of obsolescence for "mesmerizing" the thinking of political leaders in shaping shipbuilding policy in recent years.

Gibson said "It is ships such as the Doctor Lykes; it is companies such as Lykes Bros., which have the management and vision to design and operate such ships, that this country must look to in the future for support." Noting the technological advances represented by the Doctor Lykes, Gibson said "The only thing conventional about this ship is that she floats."



UNIQUE—Revolutionary new "Seabee" ship is shown in artist's conception, unloading cargo by barges which are lowered into water from stern.

Aug. 19 Issue Dropped: Will Resume Sept. 2

Issues of General Dynamics NEWS that normally would appear Aug. 19 will not be published. The action is a cost reduction measure.

Staff vacations are being scheduled to take advantage of the period of relaxed news gathering. Regular bi-weekly publication will resume Sept. 2.

Some Disney, Too!

St. George, 'Black Falcons' Featured in F-111 Story

"St. George and the Black Falcons" will be no mystery story!

It will be a true-to-life film of two men who fly an F-111 for the 429th "Black Falcons" Fighter Sq. at Nellis AFB, Nev., and of their low-level electronic practice "bombing" of an abandoned bridge over the Santa Clara River on the outskirts of St. George, Utah.

Life in the community of St. George also will be shown as it parallels—in time—that of the F-111 pilot and navigator.

"St. George and the Black Falcons" is being produced for General Dynamics and the Air Force as a joint effort by Convair and Fort Worth division motion picture sections.

Mel Gross of Fort Worth and Howard Kennedy of Convair are providing project management and Jerry Ratliff of Fort Worth and Bob Montague of Convair are co-producers.

Editing of the 20 to 25-minute film is under way and it is scheduled for release late in September.

Featured in the production are:

Maj. Alexander "Sandy" Marquardt, 37-year-old F-111 aircraft commander who has more than 3,500 hours of flight time—including more than 600 hours in F-111s, much of it in Viet Nam.

Lt. Douglas "Doug" Stenberg, Marquardt's navigator who at 26 is one of the youngest members of the "Black Falcons" flying team but has more F-111 navigation time than anyone else of any age.

Col. Frederick "Boots" Blesse, former 474th Tactical Fighter Wing and Nellis AFB commander who now is commander of George AFB, Calif., and who gives a typical pilots' briefing in the film.

Narrator for the production is David Jansen, best known for his starring role in the TV series "The Fugitive."

John Hynd of John Hynd Motion Picture Enterprises of San Diego is director and professional writer Nick Nicholson of Dallas wrote the script. Original music is being composed and orchestrated by Jack Plies, an RCA music director.

"This is one of the most free-wheeling films we've ever produced to highlight a General Dynamics product," Montague commented. "We filmed the Air Force men talking extemporaneously about the F-111 and their all-weather terrain-following mission to St. George — then tied the whole thing together with narration."

Convair camera crews made three trips to Nellis AFB and two to St. George for the filming, which ranged from a 4 a.m. sunrise to midnight scenes of the city.

Scenes in St. George show a Strategic Air Command radar facility, a 35-voice Mormon choir, a bowling alley, a night baseball game, and agriculture and dairy scenes.

Night F-111 cockpit filming was done in a flight simulator at Nellis.

Walt Disney Productions provided film for use in comparing in-flight wing configuration changes of a falcon with those of the F-111. Scenes of the F-111 production line and of installation of some of the key F-111 components at Fort Worth also are shown.

Responsibilities for filming, sound, artwork, and stock film footage was shared by the Convair and Fort Worth motion picture sections. A contemporary moving-camera technique was used for much of the new filming.

Bill McDaniels of the Fort Worth division art section provided "story board" sketches for the film crews. Film and sound editing is being handled by Bill Woods and Chuck DeMund at Convair.

"Our objective in 'St. George and the Black Falcons' is to present the story of the F-111 from the standpoint of the men who fly them," Montague said. "We think it will be very effective."

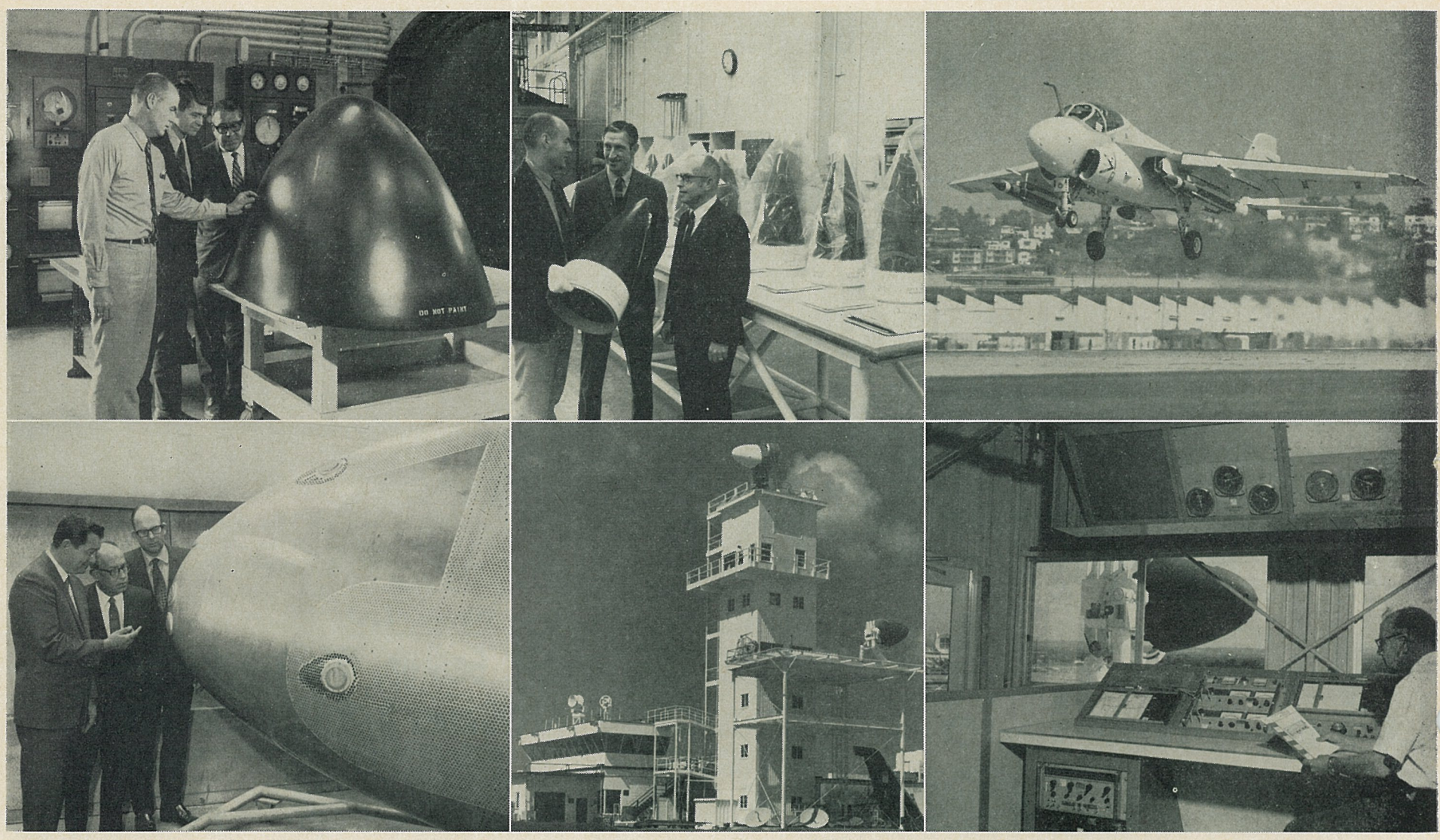
Bond Buying by Deduction Boosted to 80 Pct. in Drive

Corporate-wide, 80 per cent of General Dynamics employees are buying U. S. Savings Bonds by payroll deduction, following the 1970 sign-up campaign at most GD divisions/subsidiaries.

Stromberg-Carlson / Ardmore leads the participation list with 100 per cent, followed by Corporate Headquarters at 97 per cent and Convair division with 90 per cent. Stromberg-Carlson achieved 84 per cent while both both Electric Boat and Fort Worth divisions reached 83 per cent. Pomona and Electronics divisions did not participate in the drive but will hold their campaigns in the fall.

A total of 10,283 new savers by payroll deduction were added during the drive and 4,870 increased their allotments. More than 67,000 General Dynamics employes are regular investors.

Be sure to use the ZIP code when addressing mail. It speeds up delivery!



RADOME TECHNOLOGY—Photos show variety of Convair-produced radomes and test facilities. In top row (from left), Bill Walker, plastics shop foreman, discusses features of P2H aircraft radome with Cal Meierbachtol and Bill Garcia; Walker holds Standard ARM radome as he confers with F. D. Applegate, director of product design, and J. C. Dobyne, design specialist; Navy A6B aircraft takes off from Lindbergh Field sporting Convair radomes on its fenestrated nose and on Standard ARM missiles under wings. In bottom row (from left) Ralph Rainey, Dobyne, and Milt Chazotte take close look at 12 small radomes in modified large A6B radome; white production unit is installed on antenna range tower as black research and development model is on lower level boresight range; Francis Millican is at range control console on fourth-floor level of tower as Tom Kramer adjusts radome positioner outside.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

Q—Supervision is required to attend classes on "Attendance Control Guidelines." Why not also publicize this information on bulletin boards?

A—The presentation was given to supervisors to provide them with the facts, policy and practice so each could serve as the management communication link with his employes. It was felt that no written announcement could be as effective as the personal approach. *GD/NEWS* can lend support from time to time to recognize superior performance, such as was done in the San Diego Edition, July 22.

★ ★ ★

Q—At present, third shift employes at LF park wherever they can find a place. I suggest that they be issued permits to Lot 6 (south of the cafeteria). It would leave more space for in-coming first shift and would be more convenient for third shift. When the third shift leaves, Lot 6 is virtually empty, so there would be no inconvenience to those for whom Lot 6 is reserved.

A—There is adequate parking for third shift in several lots, including the new one west of Bldg. 4. The pedestrian gate for this lot is open 11:30 p.m. to 1:30 a.m. and from 6 a.m. to 8 p.m. It is not considered practicable to issue Lot 6 permits to third shift because of the numbers involved and difficulty in identifying drivers, etc. The only alternative would be to leave the gate open at night and this would involve undue assignment for guards.

★ ★ ★

Q—Unauthorized individuals frequently park in spaces reserved for the physically handicapped. Why is this permitted?

A—Spot checks are made from time to time and violators, when they can be identified, are approached through management channels and warned to discontinue the practice.

Schneider on Top In .22 Target Tally

Roland Schneider outpointed Jim Halfacre, 289 to 286, to take master class honors in CRA Pistol Club's .22 calibre police course competition July 26.

Dick Sutton (277) and Bill Dittmann (274) led in the expert class with James Thomas (220) first in the sharpshooter division.

Honors in .22 short national course firing went to Schneider (287), Jerry Lehrer (282), Halfacre (274), and Sutton (265).

Camera Club Plans Picnic for Aug. 30

CRA Camera Club is planning a picnic in CRA Missile Park Aug. 30. Details will be discussed at the 7:30 p.m., Aug. 15 meeting in the Photo Arts Bldg., Balboa Park.

Highlight of the meeting will be the third quarterly contest on color slides and prints. For further information contact Erich Wolf, ext. 2507 LF.

VACATION TRIP WINNER ANNOUNCED

Mrs. Mary Cozilito, an employe of Gulf General Atomic, won the $500 vacation trip in a drawing sponsored by Convair Management Association at the July 10 baseball game between the San Diego Padres and the Los Angeles Dodgers.

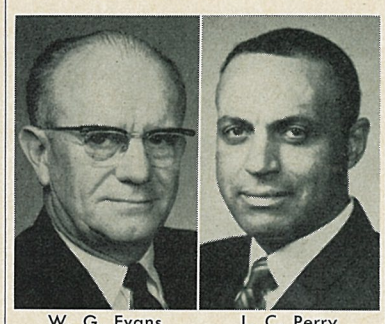
Evans Retires; L. C. Perry Takes Material Post

William G. Evans, manager of material contracts for Convair division, will retire Aug. 31 after more than 22 years of service with the company.

L. C. Perry, chief of the vehicles procurement branch and contracting officer for NASA's Lewis Research Center for 10 years before joining Convair in June, will succeed Evans effective Sept. 1. He will report to H. E. Moose, director of material.

Perry previously also had served 10 years as deputy chief of the research and development branch of the U.S. Army's Cleveland Ordnance District in Ohio.

He holds a Doctor of Law degree from Cleveland Marshall Law School, 1951, and is a member of the Federal Bar Association and the Cleveland Bar Association in Ohio.



W. G. Evans L. C. Perry

Evans joined Convair-SD in 1948 as a material department assistant after 13 years as an attorney for the city of Buffalo, N.Y. He became a material department staff assistant in 1950, a purchasing agent in 1954, and chief of subcontracting in 1957.

He was appointed assistant to the Corporate vice president of material at General Dynamics Headquarters in 1960 and became Corporate director of material in 1961.

Evans said he plans to remain in San Diego and to spend the first month of his retirement "just loafing."

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

Quartz-Polyimide Radome 'Line' Is 'Big Business' at Convair

Convair division has produced more than 1,000 fiberglass and quartz-polyimide radomes (radar or antenna coverings) for a variety of aircraft and missile programs during the past two years.

Milt Chazotte, assistant chief design engineer for antenna and compatibility labs, said Convair is believed to have the only production line for quantity fabrication of quartz-polyimide radomes in the United States.

"We recently have completed contracts totaling more than $2.5 million for such radomes — and have others in work that will bring our production to more than 1,200 units," he said.

Much of Convair's expertise in developing the thin-wall but high-heat-resistant radomes from quartz and polyimide resin materials resulted from 1968 research and development efforts, broadband radome design, and evaluation testing of antenna and radome systems for Pomona division's Standard ARM program.

"Convair materials research and operations departments have supported our continuous research and development efforts," Chazotte said. "It has been this combined team effort that led to Convair being a leading fabricator of quartz-polyimide radomes."

A variety of sizes and shapes of radomes have been produced to radome group specifications in Bldg. 27 at Kearny Mesa under the supervision of Bill Walker, Dept. 454-0 plastics shop foreman.

Precision application of vacuum and heat to materials being used, use of special tools and layups, dielectric monitoring, and complex cure cycle techniques all are part of the intricate craftsmanship that result in delivery of quality radomes to military and commercial customers.

The division's antenna and radome ranges and control towers at the southeast corner of the Kearny Mesa plant have been used extensively to test and calibrate antennas and radomes for aircraft, missiles, and space launch vehicles.

Both Army and Navy aircraft sport Convair radomes of similar design. Radomes for the Navy P2H delivered recently to Naval Weapons Center in Corona were similar to those produced previously for the Army "Crazy Cat" program and are typical of the division's conventional radomes for subsonic aircraft.

Radomes for the Standard ARM, installed on the Navy A6B at the Pomona division modification center at Convair's Lindbergh Field plant, have been a familiar sight to Convair people for some time **(GD/NEWS, Sept. 17, 1969)**.

Convair also produces 12 small radomes for use in each of the large fenestrated (metallic grid) nose radomes of the A6B.

This radome combination permits proper operation of target identification and acquisition antenna installations and simultaneous transmission of signals from radar equipment housed within the large nose radome.

Each of the small radomes on the fenestrated surface, also made from quartz-polyimide, are installed in removable housing mounts for easy access to the antenna elements.

The grid configuration for the large nose radome resulted from a recent development program conducted by Convair for Pomona. Rework and calibration of the A6B radomes was recently provided by Convair under a contract from Grumman Aerospace Corp.

Chazotte said Convair and Electronics-SD have combined efforts for pre-proposal work and are "out to win" a contract for radome design, test, and fabrication for the future Air Force B-1 bomber.

Convair also is working with North American Rockwell and NASA on plans for space shuttle high-temperature electromagnetic windows (radomes) and antennas to be developed under NASA support research technology funding.

"Convair has the technological know-how and facilities required for future radome development and production programs," Chazotte said. "We must remain cost competitive if we are to retain our position of leadership in this field."

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 KM. Deadline for next issue of GD/NEWS is August 25. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS — Meeting 7:30 p.m. August 19.

BADMINTON—Play 7-10 p.m., Mondays, Federal Bldg., Balboa Park.

BICYCLE CLUB—Aug. 8, 25-mile ride through Point Loma. Aug. 22, 50-mile South Bay ride.

BONAIR FLYERS — Meet 7:30 p.m. Aug. 6.

BOWLING—Winter leagues now forming.

BRIDGE — Duplicate bridge sessions, 7:30 p.m., each Friday.

CAMERA CLUB — Picnic at Missile Park Aug. 30. Meeting 7:30 p.m., Aug. 15, Photo Arts Bldg., Balboa Park.

CHESS — Play 7 p.m. Aug. 12 and Aug. 26.

CHORUS—Rehearsals 7:30 p.m., Mondays.

COINEERS—Swap session, 7:30 p.m., Aug. 10.

COUNTRY & WESTERN MUSIC — Meet 7:30 p.m., Thursdays.

DELTA DIVERS — Meet 7:30 p.m. Aug. 12.

FENCING—Workouts and instruction 7:30-10:30 p.m., Fridays. YWCA, 10th & C Sts.

FISHING CLUB — Potluck 6:30 p.m., meeting 7:30, Aug. 18, Gillespie Field Clubhouse.

GARDEN CLUB—No meeting tonight, Aug. 5. Orchid sale Aug. 8-9, 3503 Yosemite St.

GUN CLUB—Fun Shoot, 9 a.m. Aug. 30.

HEALTH CLUB—Open 9:30 a.m.-10 p.m., Monday through Thursday; 9:30 a.m.-9 p.m., Fridays; 10 a.m.-5 p.m., Saturdays; "women only" weekdays, 9:30-11 a.m.

HI-FI MUSIC—Meet 7:30 p.m. Aug. 11.

ICE SKATING — GD family skate night 6:15-7:45 p.m. each Thursday, House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1 (includes skates).

MINIATURE RAILROAD—Operating sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions 7 p.m., each Wednesday, CRA Missile Park.

PISTOL CLUB—Shoot 9:15 a.m. Aug. 9 and 23, San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB—Meet 7:30 p.m. Aug. 6 and Aug. 20.

RIDING CLUB — Meeting 7:30 p.m. Aug. 12. All western Horse show Aug. 16.

RIFLE CLUB—Senior shoots 7 p.m. Aug. 12 and Aug. 26. Junior shoots 9 a.m., Aug. 15.

ROADRUNNERS — Meet 7:30 p.m. Aug. 27, Gillespie Field Clubhouse.

ROCKHOUNDS — Meet Tuesday 7-9 p.m. and Saturday & Sunday 1-4 p.m.

SAILING—Meet 7:30 p.m. Aug. 26.

SPECIAL EVENTS—Management Association and CRA annual picnic, Sunday, Aug. 9.

SPORTS CAR CLUB—Meet 7:30 p.m. Aug. 12.

SQUARE DANCE — Dance 8-10 p.m., Thursdays.

STAMP CLUB — Meeting 7:30 p.m. Aug. 13 and Aug. 27.

SWIMMING—GD family swim night 7-9 p.m., Aug. 15, Mission Beach Plunge. Tickets at employe benefits, 5 cents.

TOASTMASTERS—Convair Toastmasters meet 4:30 p.m. Wednesdays. Dynamics Toastmasters meet 5:30 p.m. Thursdays.

TRAILBIKE—Meet 7:30 p.m. Aug. 13.

TOURS — Hawaii tours meeting 7:30 p.m. Aug. 6.

WOMENS GOLF — Coronado tourney, Aug. 8. 8 a.m. tee-off.

Net 65 Wins Rancho Golf

Nearly 170 linksmen turned out last month for a CRA Golf Club tourney at Rancho Bernardo.

Art Orozco carded a net 65 to take first flight honors by a single stroke over George Putness. From tee to pin on par three holes, Ralph Way, Carl Osberg, Sam Venziano and Chuck May prevailed.

Other flight winners, each receiving gift certificates, were 2nd Flight—Ray Kaminsky 62, Ed Wargo 62, (matched cards); 3rd Flight — Joe Hooker 62, George Velasquez 64; 4th Flight —Art Phelps 62, Harold Allison 63; 5th Flight — Eric Torp 62, Bill Bussard 64; 6th Flight— Chuck May 65, Bill Baldwin 67.

Winter Bowl League Meetings Scheduled

Organizational meetings for CRA winter bowling leagues will be scheduled beginning Aug. 17. All leagues will bowl at 6:30 p.m. with the season starting early in September.

Firm dates and times for the organizational meetings can be obtained by calling coordinators for the leagues, listed below:

Monday — Management 825-scratch, Clairemont Bowl; Harry Lund, ext. 2144 LF. Management 825-scratch, Parkway Bowl; Buzz Prettyman, ext. 3385 KM.

Tuesday — Mixed foursome, Clairemont Bowl; Lorraine Cale, 276-2240, or Ray Merritt, ext. 2871 KM. Mixed foursome, Parkway; Don Evanson, ext. 3213 KM.

Thursday—Electronics-SD mixed fivesome, Frontier Lanes; Joan Bance, ext. 1675 LF, or Bill Binder, ext. 1681 LF.

Friday — Men and mixed trio, Pacific Recreation; Mike Brooks, 469-8793.

Recovery System for Models In Wind Tunnel Earns Award

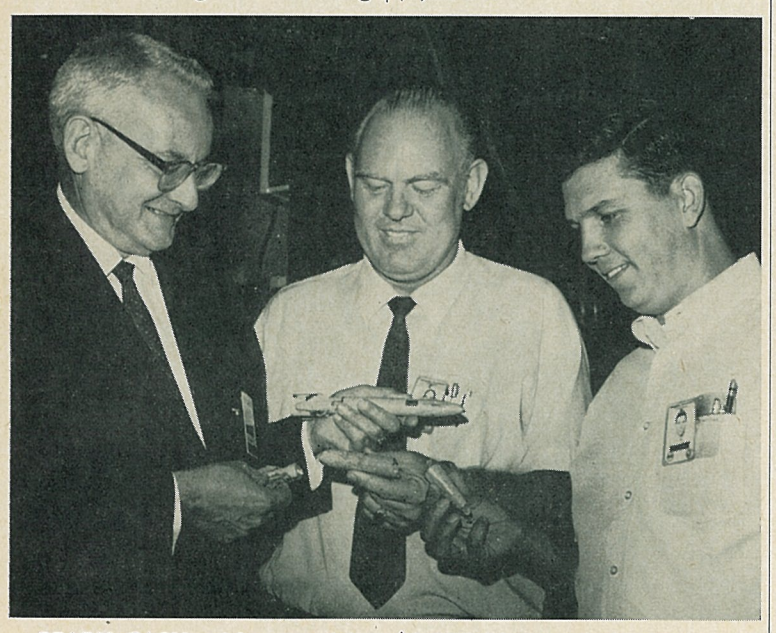
An idea submitted by two Convair division engineers assigned to the high speed wind tunnel is expected to save $35,518 and at the same time help reduce customer cost as well.

Bob Black and Randy Culp, both of Dept. 507-0, designed a metal channeling unit to catch drop models, commonly called "stores,' during wind tunnel testing. The channeling system helps guide stores to a slot in the tunnel floor that prevents breakage of the valuable models.

Also benefiting from the suggestion will be the customer, who will be able to run the same test with fewer models. Additionally, by reusing the same stores, averaging $1,000 each, more extensive testing to provide additional test data may be run.

During initial investigation, it was found some stores could be used three times before new models were required. When salvaged intact, the models are reworked in a few hours and need not be recalibrated.

Black and Culp each received $1,775.90.



READY CASH—After receiving $1,775.90 award checks from J. M. Wild, left, for Employe Suggestion which prevents wind tunnel drop models from breaking, R. L. Black, center, and R. R. Culp help display "before" and "after" store.

KART KING—Bill Gregory of Convair's Dept. 780-4 won national go-kart championship recently in Indianapolis, Ind. His 130-cc kart has top speed of almost 150 miles-an-hour.

CRA Offers Weekly Tours of Hawaii

CRA will host a "Hawaii tours" meeting at 7:30 tomorrow evening (Aug. 6) in Room C at the CRA Clubhouse at Kearny Mesa.

Four different tour "packages" are being offered with weekly departure for the islands in the current CRA Hawaiian travel program. Included are:

Waikiki—seven days and six nights in Honolulu, leave Thursdays, $199.

Aloha State—13 days and 12 nights, leave Thursdays, $299.

Vanda Orchid—13 days and 12 nights, leave Thursdays, $359; or 14 days and 13 nights, leave Saturdays, $399.

Each includes round-trip flights between San Diego and Honolulu on Western Air Lines.

Club to Offer Bargain Orchids

Several divisions of Cymbidium orchids will be offered by the CRA Garden Club to all Convair employes Saturday and Sunday, Aug. 8-9, at bargain prices.

Popular varieties will go from 50 cents to $5 and special attention will be directed to employes who have never grown orchids. Additionally, club members will be on hand to demonstrate techniques in dividing and repotting the plants and culture sheets on orchid care will be avaliable.

Everett Henderson, CRA Garden Club commissioner, is coordinating activities with plants being displayed at his home, 3503 Yosemite St.

Margaret Clark's 77 Wins Women's Golf

Margaret Clark fired a net 77 to take first place in last month's General Dynamics Women's Golf tourney over Chula Vista Municipal links. May Dean Schell finished second, two shots back.

Dorothy Johnston was third and took the merchandise prize for fewest putts.

The distaff golfers will hold their next match Aug. 8 at Coronado. Tee-off is set for 8 a.m.

Cyclists Will Make Point Loma Tour

Two August rides have been scheduled by CRA Bicycle Club. On Aug. 8, members will tour Point Loma on a 25-mile ride and on Aug. 22, a 50-mile South Bay area ride is planned.

Ride leader for the Point Loma tour is Bob Williams, ext. 1148 LF. Cy Campbell, ext. 1008 LF, will lead the South Bay ride.

COIN COLLECTORS PLAN SWAP SESSION

CRA Coineers have scheduled a coin swap session in lieu of a speaker for their 7:30 p.m. Aug. 10 meeting in the CRA Clubhouse auditorium. Exhibits, an auction, door prizes, a drawing, and refreshments also are planned.

Convair Electronics Technician Wins National Go-Kart Crown

Convair's Bill Gregory had lucky No. 13 and the hottest car on the track as he won the national championship for 130-cc formula go-karts last month in Indianapolis.

Gregory, a senior electronics technician in Dept. 780-4, was among 680 drivers competing for national honors in 14 formula go-kart classes in grueling one-hour races on the 2½-mile asphalt Indianapolis Raceway Park track.

He can exceed 140-mph on the straightaway in his 130-cc kart but figures 125 was about his top speed at Indy. "The track has 15 turns and it keeps you busy just turning," he said. "I averaged 2.02 minutes per lap."

This was his third year to try for the national crown. He ran fourth in 1967 and sixth in last year's competition.

Gregory's kart has a fiberglass body that clears the track about an inch, steel tubing for its frame, a 29-hp Italian-built two-cycle engine that burns alcohol and oil and is "fantastic for its size," and disc brakes on both front and rear wheels.

"It's a fairly sophisticated machine and handles a lot like a big race car," Gregory said.

He drives the kart from a near-horizontal position with only his head extending above the vehicle's body. Steering is with a handlebar-type tiller that extends up just a couple of inches above his legs.

Gregory usually drives his championship car on the Riverside International, Orange County International, and Willow Springs International raceways in California.

He has about $1,200 invested in the car and credits his 25 years of experience on Convair aircraft programs with its success on the tracks.

"It's built a lot like a plane," he said. "It's light but strong and takes a beating. It has no suspension system — so the wheels take a jolt when you hit a bump at 100 or 125 miles-an-hour."

Gregory also drives sprint karts, short go-karts with no body that are driven from a sitting position, the first and third Sundays each month on a track near Jamul.

Go-karting is both an avocation and a hobby for Gregory. He and his wife sell and service go-karts weekday evenings and Saturdays at Bug Engineering—and he has been president of the 55-member San Diego Karting Association for the past five years.

His brother, Bob, a Dept. 780 supervisor, also enjoys karting and first ran go-karts several years ago on weekends on the Kearny Mesa plant parking lots.

Gregory, with his wife and a friend as assistants, arrived at Indy June 27 and he had three days of practice racing and one day to tune up his kart before the championship race July 3.

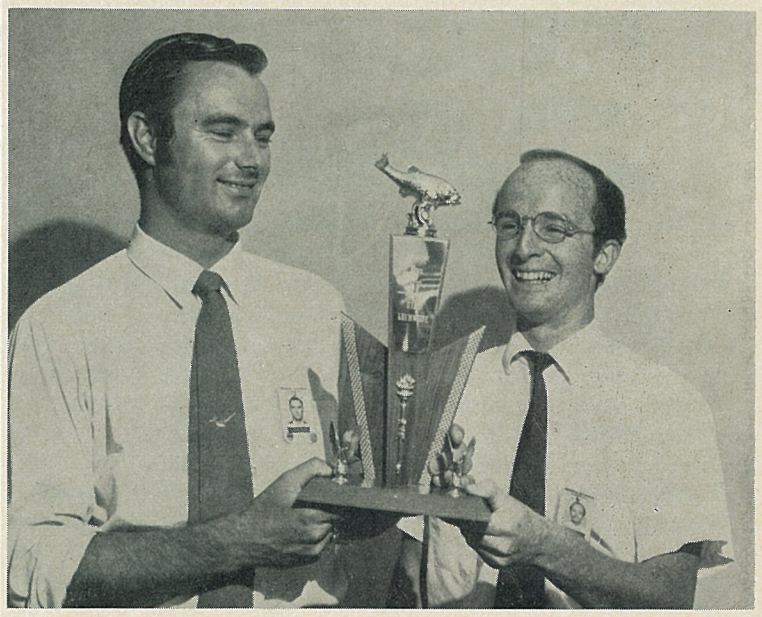
The race began from a standing start and ran one hour, with final standings being based on number of laps completed or car positions if there were more than one car running in the same lap when the finish-gun was fired.

As national champion in his class, Gregory received a 25-inch trophy with a built-in clock and merchandise awards—but no "big money" like big-car winners in the Indy 500 receive.

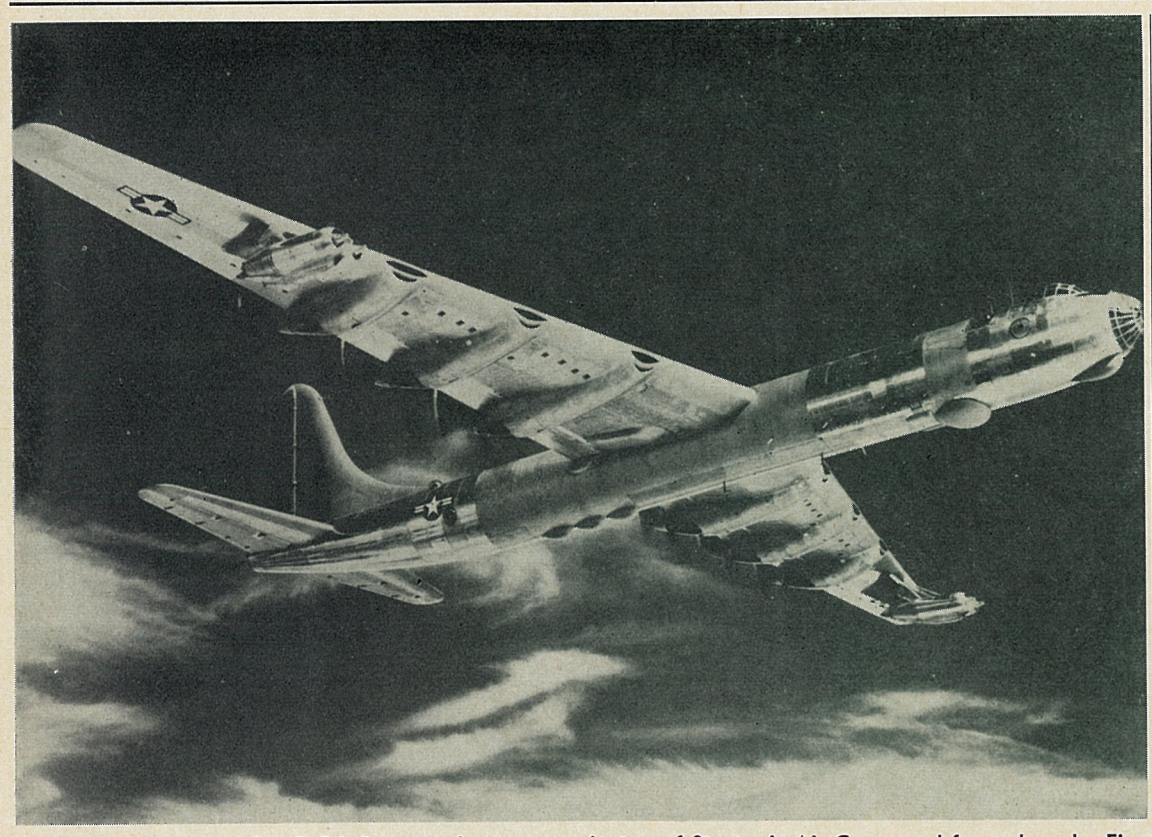
"We race for fun rather than money," he commented. "And you meet a lot of nice people."

TV PRODUCER WILL SPEAK

Jim Bruce, producer of the television series Racing World, will be guest speaker at the CRA Sports Car Club meeting at 7:30 p.m., Aug. 12 in the CRA Clubhouse. All interested Convair employes are invited to attend.



HAPPY ANGLER—Chuck Ricards, right, presents trophy to Gary Krumweide who landed five-pound barracuda to win fluid systems engineering group fishing tournament last month. CRA donated the trophy.



YESTERDAY'S HERO—B-36 Peacemaker was mainstay of Strategic Air Command for a decade. Five big bombers are on display in museums across nation.

Five B-36s Still Survive, Though All 'Grounded'

Where are they now—the giant B-36 Peacemakers that served as the backbone of Strategic Air Command during the decade from 1948 to 1958?

According to Researcher Meyers K. Jacobsen, only five of the big bombers are intact, and they're all on display: two at Wright-Patterson AFB, and one each at Chanute AFB, Offutt AFB and Greater Southwest International Airport.

The B-36 at Greater Southwest was the last of 385 Peacemakers to roll off Fort Worth division assembly lines. It was flown to Carter Field in February 1959, in "Operation Sayonara" and put on display. Fort Worth division employes have kept the aircraft "spruced up" over the years.

"Unfortunately, vandals have taken some parts since traffic has slowed so much at the airport," said Sam Keith, chairman of the B-36 Memorial Committee.

Employes also had a hand in refurbishing the B-36 at the Air Force Museum, Wright-Patterson AFB, Ohio. This was the second B-36 off the line and now the oldest one in existence.

However, a later model B-36J was flown to Wright-Patterson April 30, 1959 (the last B-36 ever to fly), and it is destined to replace the older aircraft now on display at the museum.

Fate of the earlier-model B-36 appears to be dismantling, unless some private museum can afford to move it. Several museums—including the Tucson Air Museum which recently obtained a B-24 Liberator from India—have such a move under study.

The B-36 at Chanute AFB, Ill., is a reminder of the base's contribution to the training of thousands of Air Force men who maintained the Peacemakers in their day.

The Peacemaker on display at Offutt AFB, Neb., is one of the last B-36Js off the line. It was accepted at the base in 1953.

During its time, the B-36 was the only heavy bomber capable of carrying then available nuclear weapons on an intercontinental mission without refueling.

Though never used in combat, the B-36 deterrent fleet was credited with preventing a nuclear war.

Lt. Gen. C. S. Irvine, at the B-36 memorialization ceremony, said the aircraft was "the first major weapon system to come into the operational inventory, superbly perform its deterrent mission, and be retired without firing a shot in anger."

Jacobsen said there is surprisingly little photographic evidence remaining of B-36 missions because of secrecy surrounding SAC operations in those early days.

Accordingly, members of the American Aviation Historical Society with mementos, or photographic or other documents are urged to get in touch with Jacobsen at 324 South Weitze, Apt. Y, Oceanside, Calif. 92054.

Enrollment Open For Savings Plan

Enrollment in General Dynamics Savings and Stock Investment Plan is open during August for new members or changes in existing plans.

All employes who have established eligibility by being with the company a full year, can sign during this month for membership to be effective for the quarter beginning Oct. 1.

Present members of the plan can either change their investment option or percentage of savings by making application this month. Forms and additional information are available at employe services.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

BERTRAND BOSSE (1958) from Electric Boat division to Quincy Shipbuilding division as senior quality assurance engineer; **CHARLES G. SCHUTZ** (1961) from Corporate Headquarters to personnel administrator, Pomona; **ROLAND SWEET** (1968) from Electronics, Rochester to Stromberg-Carlson as senior technical instructor; **MORRIS HERMAN JR.** (1956) from Electric Boat to quality assurance engineer, Fort Worth; **WALTER LONG** (1967) from Quincy to Stromberg-Carlson as individual account executive; **STEWART MILLS** (1966) from Electric Boat to programmer, Quincy; **PETER BONDY** (1967) from Electronics, Rochester to engineer, Stromberg-Carlson; **F. PAUL SIMPSON** (1943) from Electric Boat to Canadair Limited as manufacturing engineering project coordinator; **WILLIAM F. PRUETT** (1956) from Convair to Stromberg DatagraphiX; **WILLIAM E. RISTER** from Fort Worth to aerodynamics engineer, Convair; **FARREL L. PATTON** from Quincy to Convair as senior budget analyst.

Divisions Benefit By Pooling Data On Supplier Firms

An Employe Suggestion that will save eight General Dynamics operating units an estimated $19,714 a year has resulted in W. G. Lux of Convair division receiving two award checks totaling $1,260.30 and the division's first 15-award Cost Reduction Achievement pin.

At his suggestion, individually published "approved supplier" documents for the eight organizations have been combined with elimination of much duplication of effort.

Lux, a reliability engineer in Convair's Dept. 144-1, recently was awarded the achievement pin and a check for $711.10, representing five per cent of the expected savings from his ES at Fort Worth, Pomona, Quincy, Electric Boat, Canadair, Electronics-Rochester, and Electronics-SD.

He previously had received $549.20 as 10 per cent of the estimated annual savings for Convair, his home division. The achievement pin was for his having had 15 Employe Suggestions and Cost Reduction Projects approved since the award program was instituted Dec. 15, 1969.

Prior to implementation of Lux' suggestion, each of the eight General Dynamics organizations surveyed its supplier firms' quality control status and capabilities and published its own suppliers' status document.

Now each of the eight supply input on selected suppliers and share the cost of printing of a unified supplier quality control status document.

This eliminates duplication of supplier survey effort and of publication and exchange of individual source documents. A standard format now is used to provide the one Corporate-wide source document.

A "controlling division" is indicated for each supplier firm with that division responsible for updating of information as needed. Printing and distribution of the Corporate-wide document is handled by Convair division directly from computer-ready input from each participating organization.

Lux' suggestion was approved and implemented by the General Dynamics quality panel's process quality control working group.

Cure for Blisters On Radome Outlined

Clay Price Jr., Fort Worth division, Dept. 062-3 project aerosystems engineer, presented a paper at the recent tenth annual symposium on Electromagnetic Windows at Georgia Institute of Technology.

Subject of the paper was, "Cause and Cure of Neoprene Coating Blisters on Supersonic Aircraft Radomes."

Europeans Interested In Assist For Shuttle

Representatives from major European aerospace firms may be working with Convair personnel on the Phase B space shuttle study by the end of September.

Davy Jones, Convair space shuttle program requirements director, said firms from several countries that have expressed a desire to assist in development of the space shuttle are prepared to send technical personnel to Convair and North American Rockwell (NR) if agreement is reached by NASA, the U.S. State Department, and their governments.

"Having representatives work with us on the Phase B definition study would provide a better basis for the European firms and their governments to determine how they may wish to assist in Phase C-D detail design and vehicle fabrication and testing," Jones said. "The European countries are desirous of maintaining and updating their technology base. Rather than having hundreds of unrelated research programs, they could participate in space shuttle development and be current in their technology. They would also be users of the space shuttle to eventually put their payloads into orbit."

Jones said teams from selected European firms might participate in the Phase B effort if the proposal materializes.

Three Convair division representatives visited aerospace firms in France, Germany, Italy, and England last month for discussions on the space shuttle program after attending the European Launcher Development Organization and NASA-sponsored briefing on space transportation systems in Bonn.

They were Dr. Donald Dooley, vice president — space programs; Jones; and Don Fagan, director of manufacturing for space shuttle.

"We had very fruitful discussions," Jones said. "Each of the firms expressed a desire to work on specific technological development areas ranging from engines and structures to flight test instrumentation and communications subsystems."

Convair division hosted a meeting of the NR-Convair space shuttle team executive steering committee last Thursday (July 30) at the Kearny Mesa plant.

Attending were key program executives from NR, Convair, American Airlines, IBM, and Honeywell. L. C. Josephs, division vice president and general manager, and Dr. Dooley welcomed the group.

Convair Film Chief Writes 'Off the Reel'

Robert Montague, chief of motion pictures and television for Convair division, began writing the monthly "Off the Reel" column in Industrial Photography magazine beginning with the July issue. More than 30,000 nontheatrical film makers around the world receive the publication.

Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, Aug. 22. Hours are **from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. No canvas or open-toed shoes and no bare feet.**

NEW CURRICULUM WILL BE OFFERED

A new curriculum in production technology leading to a Certificate of Proficiency or an Associate of Arts degree will be offered in-plant to all interested General Dynamics employes.

Developed in conjunction with San Diego Evening Colleges, the new major was designed to further the skills and training of production people in non-supervisory positions.

The first two courses, Machine Tool Technology and Manufacturing Profit and Expense Control, will be offered in the fall 1970 semester at Convair's Lindbergh Field plant.

Machine Tool Technology will cover practical applications of math tables, engineering and standard data, transmission of power, screwthread systems, metallurgy metal forming processes, metal joining processes, fastenings, and many more areas related to and part of production process.

Manufacturing and Profit and Expense Control will cover basic principles and techniques used by industry to control elements of cost in a competitive economy, including work measurement (time motion study), work sampling, industrial estimating, operating and performance control including budgeting, sales factors, economic forces, and administrative influences on manufacturing.

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Following are listings of three-unit courses, meeting days and instructors, to be offered in-plant 4-7 p.m. starting the week of Sept. 14.

LINDBERGH FIELD

Mondays—Management and Organization, C. C. Campbell; Shop Math II (prerequisite: Math 40 or Basic Algebra), J. C. Watt.

Tuesdays—Manufacturing Profit & Expense Control, J. B. Henn; Human Relations I, H. M. Rubin.

Wednesdays — Machine Tool Technology, C. S. Borey; Introduction to Supervision, H. M. Rubin.

Thursdays—Industrial Blueprint Reading, E. E. Chavez; Effective Writing, E. W. Thurston; Industrial Economics, D. K. Chigos.

KEARNY MESA

Mondays—Math for Electronics, E. C. White.

Additionally Occupational Safety II will be offered 5-7:30 p.m., Mondays and Wednesdays with L. J. Breen instructing.

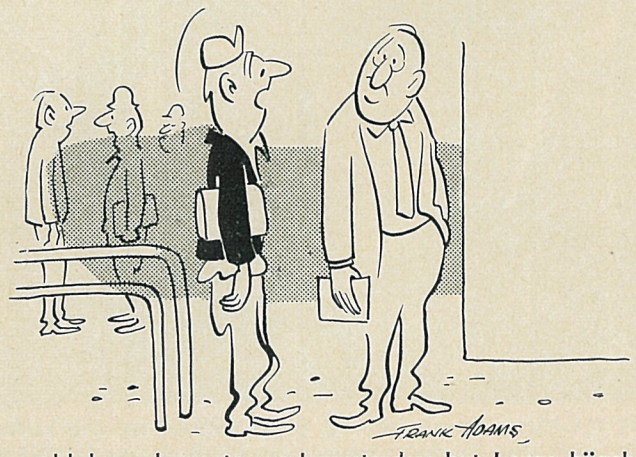
Registration will be at the first class meeting. Classes will have a limited enrollment with pre-registration through Mary Carter of educational services, ext. 2564 LF advisable. Student fee for all courses is $1.50.

HAL STORY EARNS TOASTMASTER AWARD

Hal Story of Electronics-SD, Toastmasters district governor and a member of Convair Toastmasters Club No. 3745, has been presented a Distinguished Toastmaster award.

Durwood English of Convair's Dept. 195-0, outgoing district governor, said Story was first Toastmaster in the district to qualify for the award.

Is it news? Pick up a phone and call GD/NEWS



"I would have been to work yesterday but I was hijacked to Cuba, then to Chicago, then to Rome, then to London, then to Tokyo . . ."

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 23, No. 16 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, September 2, 1970

Earnings Reported Through June, '70

Net income of General Dynamics Corporation and subsidiaries for the six months ended June 30, 1970, was $15,196,000 equivalent to $1.44 per share of common stock, Roger Lewis, president, announced.

For the first six months of 1969, the company reported a net loss of $19,372,000, equivalent to $1.84 per share of common stock. The net loss was caused by the write-off of excess costs of $59,044,000, after taxes on long-term surface ship and submarine construction contracts. Of this amount, $53,144,000 was charged against 1969 earnings and the remainder to a previously established reserve.

Net income for the second quarter of 1970 was $3,690,000, equivalent to $.35 per common share. In the first quarter of 1970 net income was $11,506,000, or $1.09 per common share.

Sales for the first six months of 1970 were $1,160,864,000, compared to $1,136,042,000 in the corresponding period of 1969. Sales in the second quarter of 1970 were $591,649,000, compared to $537,612,000 in the second quarter of 1969.

In releasing the figures, Lewis noted that consolidated income continued to be adversely affected by the performance of the Stromberg DatagraphiX subsidiary. For the six months ended June 30, 1970, he said, the adverse effect of DatagraphiX on consolidated income was $14.1 million ($7.2 million after taxes). This loss reflects $2.8 million of operating loss and $11.3 million ($5.7 million after taxes) in further inventory write-downs and a reserve for future losses.

"We have reorganized the management at DatagraphiX and cut back the organization, and we feel that, after the above mentioned write-downs and reserve and the provisions that were made in 1969 and previous years, our financial accounts are on a realistic basis in the light of present conditions.

"Progress in DatagraphiX has been disappointing, particularly in view of our earlier expectations," Lewis said.

"While the outlook under today's general economic conditions is uncertain, we hope to turn this operation around. The write-downs and reserve are reflected in the statement of consolidated income as an increase in cost of sales.

"At our Pomona division we provided a reserve of $11.0 million ($5.6 million after taxes) to recognize anticipated costs in ex-

(Continued on Page 2)

Hawaii Air Trip Heads List Of Many Travel Prizes

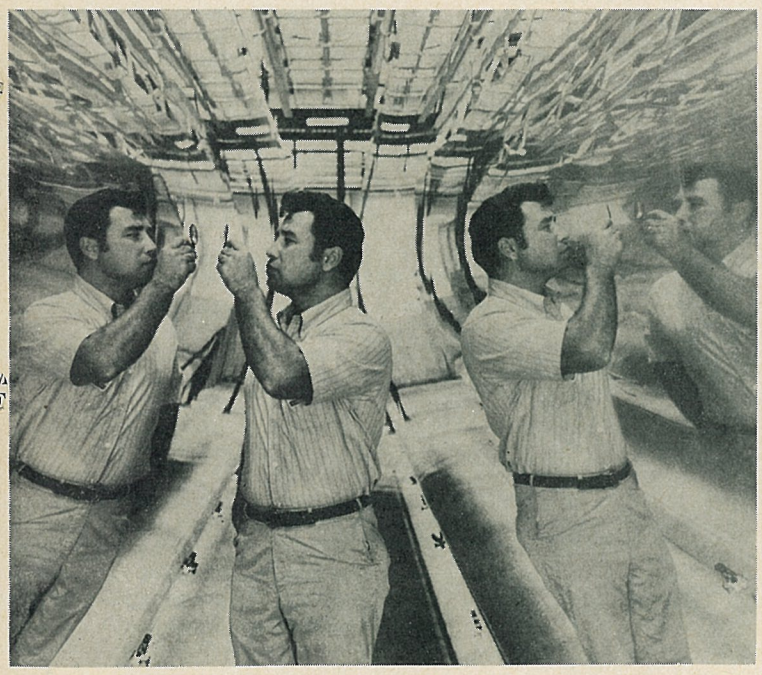
Travel prizes unprecedented in scope will go to lucky ticket holders at a Convair Management Association dinner meeting Friday, Sept. 18, at Town & Country Convention Center.

Arranged by material department with Harvey Moose as executive sponsor, the spectacular prize list is designed to raise substantial funds toward college scholarships to be awarded next year to Convair sons and daughters graduating from high school.

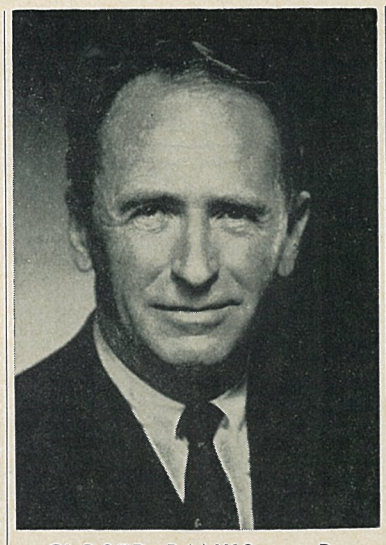
Prizes (not transferable) include: round trip by air to Hawaii via United Air Lines for five days and nights at Hilton Village; two round trips for two to San Francisco, one via UAL, the other via PSA, accommodations at San Franciscan Hotel, three days, two nights; two air round trips for two to Las Vegas, two nights accommodations at International Hotel and New Frontier; weekend accommodations for two at Hanalei Hotel, Mission Valley, dinner, etc.

Dear Abby

Guest speaker for the meeting will be Abigail Van Buren (Dear Abby), nationally syndicated lovelorn columnist. Dinner tickets are on sale via boosters at $4 for members, $5 for non-members through Sept. 11.



REFLECTIONS—It appears that Edward Angulo, processing inspector at Convair division, is in many places at same time. Actually, mirror-like finish of fuselage skins used in DC-10 production casts reflections of real Angulo, left center. Careful skin handling during fabrication and inspection is continually stressed through EZ Duzit program.



CLOSED RANKS — Roger Lewis, General Dynamics president, has announced plans for reorganizing GD's defense and space operations with a view toward a tighter alignment.

Personal Message

Reorganization Explained By Roger Lewis

(Following is a personal message to all employes from Roger Lewis, General Dynamics president.)

By now each of you has, in one way or another, either read or heard about the reorganization plan for our aerospace and defense operations which was announced last month. This plan will bring about changes that are important to the company and, therefore, to each of us. For this reason, it is essential that you understand clearly why we took this step, how it will be executed, and where we are going.

First, the whys. As you know, overall appropriations for defense and space programs have declined and further reductions are projected. Defense Department outlays, for example, in 1971 are expected to be some $7 billion less than for 1970. Expenditures in 1972 will probably, in turn, be substantially below those planned for 1971. Although the Defense Department has indicated that it does intend to preserve an essential weapons systems development and production capability, the selection and development of hardware will be accomplished at a slower rate. In the short term this means more contractors competing for fewer contracts. In the long run it will bring about a smaller but more specialized and competent defense and space industry.

At General Dynamics we are in a position to take advantage of this transition and emerge in an improved competitive posture in the 70's—provided we start now. Our goals are clear: more effective planning and control of product development, high sensitivity to requirements, improved technical performance, and reduced cost. It is both timely and urgent that we proceed with the

(Continued on Page 6)

Plants to Observe Three-Day Weekend

Observance of Labor Day (Sept. 7) will create another three-day weekend for General Dynamics employes.

Except for necessary security and maintenance functions, work will suspend next Monday and resume at regular hours on Tuesday (Sept. 8).

GD Reorganization Plans Announced

Roger Lewis, president of General Dynamics, announced Aug. 19 a two-phase reorganization of the company's defense and space operations to permit a more rapid and effective response to government requirements.

In Phase I, effective immediately, six of the company's aerospace, marine, missile and electronics will report to Dr. George E. Mueller, who has been named senior vice president of the company, reporting to Lewis.

In Phase II, the company's aircraft and space programs, both civil and military, will be placed under a single management and constitute its aerospace division. Concurrently, the company's missile systems and military electronics operations will also be placed under a single management in an ordnance and electronics systems division. No Phase II changes are planned in the organization of Electric Boat division or Quincy Shipbuilding division. The resulting four divisions will report to Dr. Mueller.

Lewis stated that management changes required in Phase II would take place shortly, but that consolidation of personnel and facilities would be accomplished over a period of months and as product lines are revised to reflect new or different requirements.

"Our decision to effect this consolidation was made after careful study of the probable needs of the Defense Department and NASA, the wide range of the company's capabilities and the environment in which defense and space contractors must expect to operate in the 70s," Lewis said.

"While it is clear that our armed forces will continue to need new and improved equipment, we are convinced the lower expenditures projected and the more conservative weapon acquisition policies announced by the Department of Defense will require better planning and tighter control of contractor resources. The companies which will do best are those which can demonstrate the ability to develop and produce hardware at the lowest cost to the taxpayer. This streamlining of our organization will ensure that General Dynamics meets these challenges of the future."

Dr. Mueller joined General Dynamics as vice president for programs and development last December from the National Aeronautics and Space Administration where he was associate administrator for manned space flight. Dr. Mueller assumed direction of manned space flight in 1963 and was responsible for the planning and execution of NASA's manned space flight program, including manned landings on the moon.

When the planning is complete and Phase II is implemented, Frank W. Davis, now president of Fort Worth division, will head the new aerospace division made up of the Fort Worth division, and that portion of the Convair division which is devoted to aircraft and space programs. Jack L. Bowers, now president of the Convair division, will head the new ordnance and electronics systems division which will include

DR. G. E. MUELLER

the present Pomona and Electronic divisions and the electronics operations of the Convair division.

Lewis said both Davis and Bowers would be responsible with Dr. Mueller for developing plans for the new divisions.

The Corporation's commercial subsidiaries will continue to report to Lewis. These include Stromberg - Carlson Corporation, Stromberg DatagraphiX, Inc. and Material Service group which includes Freeman Coal Mining Corporation, the United Electric Coal Companies and Marblehead Lime Company.

Canadair Limited and Asbestos Corporation Limited, the company's Canadian subsidiaries, will also continue to report to Lewis.

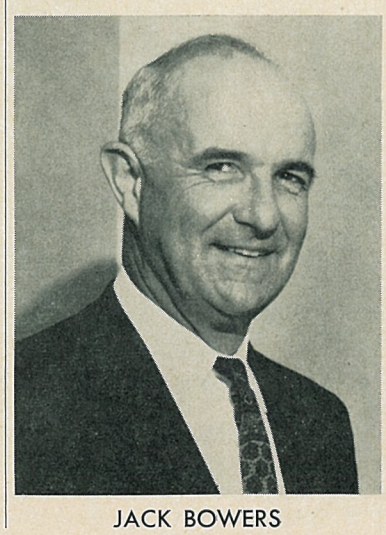
Variety of Plans Being Studied

Long-range goal of the new aerospace division is to capture enough business to fully occupy both Fort Worth and San Diego plants and to create new ones if necessary.

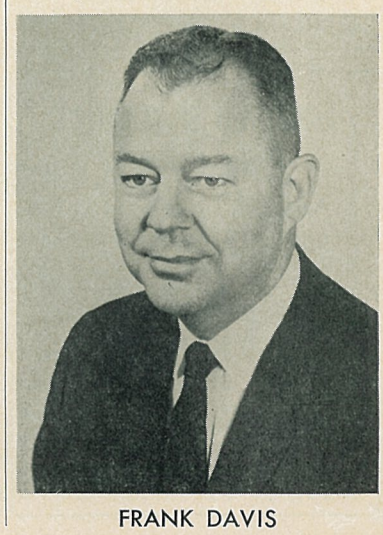
"However," said Frank W. Davis in a recent talk to the Fort Worth plant Management Association, "in the current climate we must also be able to cope with the other extreme where there might not be enough business to . . . keep more than one plant open and viable.

"The organizational structure

(Continued on Page 2)



JACK BOWERS



FRANK DAVIS

Log Book Entries

Service Emblems

CONVAIR

Thirty-five-year: Dept. 031, Burkley A. Clemmens; 451, Cecil R. Phillips.

Thirty-year: Dept. 001, P. H. Rudolph; 015, R. W. Menzie; 027, J. F. Ames, J. P. Ruiz; 031, R. E. Bowman, T. Castro; 045, I. D. Howarter, G. P. Peck; 046, W. M. Bender, H. C. Cook, C. L. McNeal, W. H. Rumbaugh, S. W. Trotter; 146, R. B. Kalanquin; 222, L. F. Lewis; 225, M. L. Goodall; 250, D. J. Markovich, R. E. Shipman; 401, F. M. Grant Jr.; 453, D. D. Klinger; 514, W. Garcia; 545, R. A. Bohler; 579, E. F. Strong; 761, L. D. Van Pelt, G. C. Zimmerman; 962, R. N. Lewton; 966, R. S. Shorey.

Twenty-five-year: Dept. 015, C. W. Haffly; 046, R. A. Reynolds; 250, W. McFarlane; 400, Pearl B. Stanley; 860, J. G. Folchi.

Twenty-year: Dept. 001, R. N. Bishop, B. McMullen; 015, K. C. Brown, S. S. Jenson; 027, W. F. Hoover, J. B. Julian; 031, G. R. Thomas; 046, W. B. Swinsdall Jr.; 101, A. B. Wood Sr.; 131, C. DiMaggio, Martha B. Dowell, C. W. Hendon, J. B. Heringhaus, V. Pry; 142, K. A. Hurst; 143, L. H. Fry, R. B. Katsan, Mary T. Kelly, C. J. Lambie; 149, E. D. Frink, W. E. Hamilton, O. F. Kennann, R. J. McLeod; 193, J. F. Scanlon; 195, C. M. Gudmundson, R. C. Harris; 202, W. E. Wise; 204, W. B. Ambrose; 205, Teresa C. DeBolt; 214, R. E. Muelchi; 222, F. E. Carranza; 225, Margaret S. Monkman; 226, J. E. Rath, Lila G. Taylor; 228, W. R. Foster, J. I. Laird, Ida S. Mitchell, L. F. Vought; 229, J. R. Levell, J. C. Van Buskirk Jr., Jennie N. Williams; 250, A. L. Burnett, J. A. Master, J. McGuffie; 400, D. M. Brown, L. C. Michenfelder, A. Roberts; 420, L. H. Cordova; 511, J. E. Burgeson, R. B. Riggan; 512, C. W. Bieberdorf; 515, J. M. Hardison; 519, R. P. Herrmann; 524, Lydia M. Curry; 545, G. Marshall; 575, R. C. Schaefer; 587, N. S. Kourbelas; 756, T. A. Martinez; 759, R. H. Churchill; 761, J. C. Davis, J. A. Hawke, Y. T. Matsuoka; 780, B. Galatis, Myrtle C. Green, Anna P. Greenfield, W. E. Linberg, Ida V. Marine, Violet M. Nye, H. C. Raptis, Eleanore W. Ringe, Mary T. Saeva; 860, R. C. Thomas; 962, W. B. Young; 967, R. G. Umholtz Jr.; 979, C. L. Cheves.

Fifteen-year: Dept. 001, C. G. Merrill; 002, C. F. Giamanco; 015, R. L. Farrar, C. B. Persing; 100, W. M. Carlson; 117, R. F. Mawhinney Jr.; 143, V. A. Wiltse; 146, Patricia E. Ford; 193, Jewel S. Kroepel; 198, G. W. Beals; 212, R. A. Clark; 224, Virginia P. Vasquez; 225, Grace D. Alderman, G. V. Owsley; 250, B. Villanueva; 400, H. L. Dodd, W. C. Foley; 401, E. F. Rogers; 402, H. L. Prettyman; 403, V. B. Dawson, J. B. Griffin; 420, J. H. Donan; 453, S. Cannizzaro; 460, A. L. Merrow; 506, R. F. Devereux; 511, R. L. Hendrix; 515, L. E. Hake; 519, J. S. Gavett; 541, W. E. Moore; 565, Jeannine J. Letzring; 570, R. L. Jaegly; 574, A. B. Yanke; 578, R. T. Tuttobene; 579, C. A. Dunkle; 584, D. T. Bowden, G. B. Yates; 595, J. H. Fountain; 744, R. A. Wyckoff; 761, T. Tomaselle; 780, L. W. Cross, W. E. Husted, E. J. Stephens; 810, W. Bornemans; 950, J. L. Minos; 962, C. F. Britton; 963, E. R. McFadden.

Ten-year: Dept. 015, H. E. Dickerson; 046, Wylodean M. Dorrough, Leslie M. Earl, Helen B. McLaughlan, R. L. Miles, Nellie C. Ybarra; 101, Vivian D. Biwer, T. G. Neff; 110, Patricia J. Cabigao, Nancy A. McCartney; 130, N. Freeman; 131, L. H. Steward; 141, J. T. Asprion; 142, D. J. Clemens; 143, A. Ragsdill; 141, L. E. Campbell Jr.; 149, E. G. Smith; 170, R. M. Jones; 191, G. A. Kewley Jr.; 204, Edith M. Caito; 205, Lucille M. Cerny; 224, Linda M. Reed; 229, L. H. Bracken; 401, V. W. Fuson; 403, N. L. Cross; 507, R. F. McGinnis; 518, R. N. Allen, A. E. Dent, Minnie Faasse, R. J. Zenger Jr.; 550, W. F. Briles, R. S. Durnell; 551, R. A. Thiel; 569, A. W. Adams Jr.; 578, H. Guttmann; 585, A. W. Nelson; 731, H. M. Turner; 780, Eulene A. Davis, W. L. Johnson; 820, W. C. Buxton; 840, Eva J. Ward; 860, D. T. Murphy; 966, T. E. Reed; 967, F. D. Kuenzel, H. V. Lewis Jr.; 979, F. R. Finley, R. J. Ward, V. J. Wassmuth.

ELECTRONICS

Thirty-year: Dept. 423, R. L. Hurst.

Twenty-five-year: Dept. 102, G. W. Leesch.

Twenty-year: Dept. 421, E. R. Peters Jr.; 565, P. Goetz Jr.

Fifteen-year: Dept. 106, E. F. Stelmar; 116, R. F. Voell; 566, Emma Jean Webb; 614, L. B. Espinoza; 713, D. R. Williams.

Ten-year: Dept. 416, A. J. Moore; 426, L. W. McCay; 566, G. P. Himel; 811, E. O. Snyder.

Awards

CONVAIR

Employe Suggestion awards approved for week ending July 31:

J. C. Ascencio, Dept. 401-1, $39.80; C. A. Banks, 059-2, $77.60; J. H. Beals, 780-4, $15; A. E. Brady, 507-0, $15; C. W. Carlson, 250-1, $15; J. M. Castro, 780-4, $15; J. S. Curtis, 143-1, $40.80; C. W. Donahoo, 142-1, $235.30; V. H. Duduit, 979-1, $15; D. Eberly, 840-2, $60.65; M. C. Escareno, 250-5, $15; F. L. Estevane, 143-3, $81.65 (two awards); R. H. Feeley, 810-0, $46.40; L. Ford, 250-0, $25.50; B. Gammon, 250-0, $25.50; M. Gonzales, 840-3, $18; H. F. Guttmann, 578-5, $38.40; P. M. Hallward, 810-0, $24.10; J. D. Hamner, 985-1, $303.20.

Also H. Hoelter, 820-0, $317.40; R. L. Hume, 780-1, $68.80; K. L. Jackson, 407-0, $146.50; L. M. Jones, 143-4, $15; P. E. Langley, 524-3, $15; R. H. Meyer, 401-4, $325.20; L. Ortiz, 143-3, $81.65 (two awards); R. M. Parrish, 832-2, $96.90; L. W. Poff, 250-3, $15; R. H. Ross, 860-0, $79; A. Sansone, 541-0, $15; A. Stebbins, 401-1, $39.80; C. R. Stitch, 820-0, $432.00; A. L. Thompson, 840-2, $60.65; E. L. Torpe, 780-1, $15; C. E. Vickers, 985-3, $15; J. L. Vidovich, 407-0, $15; E. F. Whalen, 149-8, $15; L. F. Williams, 954-1, $15; R. L. Yauney, 143-6, $15.

Employe Suggestion awards approved for the week ending Aug. 7:

H. B. Adamson, Dept. 015-0, $15; D. Belchamber, 250-1, $5; E. Borden, 141-4, $25; M. C. Brooks, 985-4, $15; O. W. Bruton, 143-5, $21; H. T. Christopherson, 144-1, $5; J. J. Corbett, 143-1, $15; J. J. Curci Jr., 149-1, $15.10; R. A. Gamboa, 019-0, $40.40; G. Gibbons, 144-1, $5; L. E. Green, 979-4, $7.50; C. R. Hodsden, 979-4, $15; G. R. Johnson, 001-0, $16.50; J. S. Knutson, 780-3, $15; V. J. Lima, 146-3, $15; R. L. Lorentsen, 027-0, $104.20; R. L. Lucas, 143-1, $15; M. B. Murrah, 780-4, $7.50.

Also M. Nicolet, 250-1, $5; J. F. Prescott, 963-1, $15; T. R. Reid, 250-0, $15; M. P. Robbins, 780-6, $7.50; N. C. Robinson, 027-0, $15; F. M. Russell, 979-4, $7.50; R. W. Sanger, 507-0, $16.20; N. Sherman, 045-0, $7.75; J. R. Smith, 744-0, $15; M. V. Sponsler, 143-3, $15; E. W. Sweeney, 565-1, $108; A. L. Vinzant, 962-3, $117.40; M. Vukelich, 144-1, $5; B. White, 250-1, $5; R. Yturralde, 045-0, $7.75; S. W. Zeiss, 780-4, $15.

Employe Suggestion awards approved for the week ending Aug. 14:

F. W. Anding, Dept. 962-3, $15; S. I. Beadle, 143-3, $20.20; N. Chaudoin, 733-0, $15; H. F. Clark, 059-2, $38.10; R. R. Clarke, 015-0, $7.50; G. D. Clarkson, 027-0, $15; R. E. Culver, 143-1, $15.80; R. M. Darling, 149-5, $30; B. A. Dill, 565-1, $42; C. D. Duncan, 836-1, $8.80; J. S. Fisher, 250-5, $73.10; M. E. Gallagher, 149-0, $39; R. Gamboa, 002-0, $37.45; W. J. Gibson, 016-0, $15; F. Gomez Jr., 019-0, $15; J. P. Gomez, 019-0, $16.30; T. L. Griswood, 836-1, $8.80; M. J. Kriens, 780-6, $27; R. N. Lewton, 962-30, $94.70; R. E. Mack, 027-0, $15; M. M. Madrid, 842-0, $43.40; G. R. McElroy, 565-1, $90.

Also E. McLeod, 148-2, $34.80 (two awards); H. N. Miller, 046-0, $15; A. J. Millette, 407-0, $15; E. M. Myers, 149-5, $37.45; W. M. Myers, 780-4, $15; R. D. Prock, 454-0, $138.60; H. J. Quick, 142-1, $15; C. C. Rakestraw, 228-1, $30 (two awards); A. T. Ramberg, 780-2, $15; W. Ross, 015-0, $57; H. O. Schroeder, 031-1, $30; F. P. Schrosk, 015-0, $15.10; R. A. Snyder, 780-1, $30.50; W. J. Steffen, 142-1, $15; F. Taijcron, 015-0, $7.50; R. A. Thompson, 046-0, $83.60; J. C. Vieth, 565-2, $15; L. H. Wilson, 027-0, $19.80; S. W. Zeiss, 780-4, $40.60; B. A. Kodger, 836-1, $8.80.

Employe Suggestion awards approved for the week ending Aug. 21:

A. Aron, Dept. 574-2, $40.10; C. A. Banks, 059-2, $94.30; A. W. Beckman, 015-0, $15; D. S. Beight, 964-2, $15; D. E. Demers, 001-0, $15; R. S. Bernstein, 015-0, $15; H. D. Blackard, 149-7, $15; J. J. Boyer, 045-0, $30 (two awards); L. K. Denaco, 507-0, $19.70; F. Estevane, 143-3, $7.50; R. L. Forbes, 142-1, $15; A. Gay, 584-0, $15; F. Gingrich, 780-1, $7.50; A. Gonzales, 019-0, $7.50; A. Gonzales, 019-0, $63.20; C. H. Gray, 002-0, $38.40; R. E. Gunnerson, 196-0, $67.40; R. E. Handley, 027-0, $87; M. R. Hawley, 761-0, $15; R. A. Johnston, 149-6, $15; V. Kahr, 565-3, $20; H. D. Kielmeyer, 191-0, $30.10; J. J. Killeaney, 027-0, $15.

Also J. J. Letzring, 565-3, $15; C. J. Lewis, 250-1, $40; J. T. Mallory, 454-0, $78.30; J. K. McDonough, 015-0, $15; C. A. McKinney, 149-5, $35.70; B. J. Moore, 149-1, $47.70; L. B. Muzzy, 148-2, $19.80; W. W. Nobiensky, 001-0, $7.50; L. Ortiz, 143-3, $7.50; W. C. Pahl, 049-0, $59.70; L. S. Payne, 130-2, $15; G. L. Pinho, 019-0, $15; W. Ross, 015-0, $15; C. W. Smith, 454-0, $7.50; O. J. Sonsteng, 761-0, $15; L. Spurgeon, 761-0, $50; E. Sweet, 780-1, $7.50; M. H. Thrasher, 001-0, $7.50; J. C. Vieth, 565-2, $39; A. H. Wittmann, 454-0, $7.50; J. E. Prather, 454-0, $122.80.

"Cost Reducers"

CONVAIR

Cost Reduction Achievement pins presented:

Five-credit pins — L. Imbimbo, Dept. 046-0; S. Cohen, 141-2; C. E. Boyd, 149-3; W. Herring, 144-1; H. L. Prettyman, 402-0; R. M. Buss, 511-6; M. Vukelich, 144-1; T. J. Marcella, 144-1; E. J. Bourgeois, 491-0; J. N. Coulson, 491-0; L. Dassoff, 143-3; E. H. Lawton, 143-3; W. W. Lacy, 149-3.

Ten-credit pins—J. Frogge, 144-1.

Twenty-credit pins—W. G. Lux, 144-1.

Retirements

CONVAIR

ANDERSON—Albert C., Dept. 130-1. Seniority date March 18, 1941, retired Aug. 21.

BUSCH—Karl P., Dept. 517-0. Seniority date May 25, 1943, retired July 31.

CARRICK—Franklin, Dept. 131-1. Seniority date April 21, 1956, retired Sept. 31.

CROUCH—Azrel J., Dept. 565-1. Seniority date Sept. 25, 1963, retired July 13.

CULVER—Ralph J., Dept. 195-8. Seniority date Nov. 14, 1960, retired July 31.

EMETERIO—Beatrice H., Dept. 143-3. Seniority date March 12, 1957, retired Aug. 14.

FILDES—Roy C., Dept. 810-0. Seniority date Oct. 14, 1946, retired July 31.

FULTON—Jack A., Dept. 515-0. Seniority date Nov. 16, 1951, retired Aug. 14.

HAAS—Rudolph T., Dept. 057-0. Seniority date March 6, 1941, retired July 31.

JACOBS—Charles F., Dept. 979-1. Seniority date Nov. 11, 1955, retired July 31.

LEWIS—John R., Dept. 027-0. Seniority date Sept. 6, 1940, retired July 31.

LINVILLE—Arqueline M., Dept. 191-0. Seniority date Nov. 29, 1956, retired July 24.

MATIASH—John, Dept. 142-1. Seniority date June 28, 1961, retired July 31.

MEARS—Frank H., Dept. 506-3. Seniority date Aug. 8, 1961, retired April 5.

RILEY—Herman C., Dept. 019-0. Seniority date Jan. 16, 1956, retired July 31.

ROGERS—Stanley, Dept. 550-0. Seniority date June 18, 1943, retired July 24.

SCHNEIDER—Francis L., Dept. 002-0. Seniority date Dec. 16, 1964, retired July 31.

STOLTE — Frederick J., Dept. 013-0. Seniority date Sept. 11, 1941, retired July 31.

THOMPSON — John H., Dept. 059-1. Seniority date June 25, 1953, retired July 31.

VILJOEN—Henry W., Dept. 731-0. Seniority date May 14, 1968, retired July 31.

WEIDENFELLER — Wilmer F., Dept. 130-3. Seniority date Oct. 3, 1956, retired July 31.

WILLIAMS—Frederick G., Dept. 526-6. Seniority date July 1, 1941, retired July 31.

ELECTRONICS

REEVES—Gertrude P., Dept. 923. Seniority date Nov. 29, 1965, retired Sept. 1.

Papers Presented

CONVAIR

BONINE—Kenneth C., Dept. 574. "Design considerations for continuous system simulation languages." Computer Simulation Conference, Denver, Colorado, June 10-12.

GRIGGS—M., Dept. 596. "An infrared scanning spectrometer for high-resolution atmospheric emission measurements." Air Pollution Control Assoc. Meeting, St. Louis, Missouri, June 14-19.

JENSEN—J. E., Dept. 587. "Ballistic damage characteristics and the ballistic damage tolerance of wing structural elements." American Society for Testing and Materials Meeting, Toronto, Canada, June 22.

KING—John L., Dept. 142. "The importance of visibility and control in laboratory management systems." National Conference of Standards Lab., Gaithersburg, Maryland, June 16.

LANGFORD—G. J., LUNDQUIST—G. D., Dept. 491. "Electron beam welding of 2021 aluminum." American Welding Society Convention, Cleveland, Ohio, June 9-12.

NAU—Richard A., Dept. 581. "Space shuttle system requirements and configuration options effects on technology requirements." ASME Space Technology and Heat Transfer Conference, Los Angeles, Calif., June 21-24.

ROSCOE—R. G., Dept. 142. "Quality management of metrology." European Organization of Quality Control, Lausane, Switzerland, June 15-18.

STEPHENS—Paul B., Dept. 584. "Oxygen-hydrogen attitude control propulsion system characteristics for space shuttle." AIAA Propulsion Joint Specialist Conference, San Diego, Calif., June 22-26.

WITHEE—W. W., Dept. 501. "Experiment module concepts." American Astronautical Society Meeting, Anaheim, Calif., June 7-10.

Papers presented at the 17th Refractory Composites Working Group, Williamsburg, Va., June 16-18.

BAER—J. W., Dept. 572. "Fabrication of coated columbium for the space shuttle."

BLACK — W. E., Dept. 512. "Space shuttle vehicle radiative thermal protection systems."

DE LACY—Thomas J., ANDERSON—Robert T., Dept. 572. "Non-destructive testing of composites and refractory coatingss."

Papers presented at the Marine Technology Society Sixth Annual Conference, Washington, D.C., June 29-July 1.

SAMPLES — Kenneth, BARLOW — George T., Dept. 506. "Digital CTD sensors for an automated Ocean Data Station."

WOODLE—Roy V., Dept. 506. "A comparison of H. F. and satellite data relay systems for buoy networks."

Births

CONVAIR

CAPERS—Son, Homer Capers Jr., 8 lbs. 5 ozs., born Aug. 6 to Homer (Dept. 250-4) and Martha Capers.

HANNON—Daughter, Heater Lynn, 8 lbs. 5 ozs., born Aug. 19 to Mr. & Mrs. Jerry Hannon, Dept. 015.

MEDINA—Son, Victor Daniel, 8 lbs. 3 ozs., born Aug. 2 to Ernest (Dept. 780-6) and Socorro Medina.

Deaths

CONVAIR

BEARD—Viola M., Dept. 780-1, died Aug. 1; survivors include two sons, two daughters, and seven grandchildren.

BELT—Lester E., retired Dec. 5, 1956, Dept. 101, died July 3. Survived by his wife, Gertrude.

BUMPUS—Oscar H., retired Feb. 27, 1959, Dept. 223, died July 15. Survivors include his wife, Flossie.

CARSON—Robert S., retired Jan. 5, 1961, Dept. 192-7, died July 8.

FASSETT—Harold S., Dept. 44-2 retiree (1960), died July 27. Survived by his son, Harold.

FERRIS—Robert Graves, Dept. 148-2, died Aug. 1; survivors include a son, Robert; a daughter, Patricia; and his mother, Mrs. Irene Ferris.

GRENOLDS—Gordon B., Dept. 841 retiree, Oct. 31, 1966, died June 19. Survivors include his wife, Elenore.

HAY—Raymond J., Dept. 250-1, died July 12. Survivors include a sister, Mrs. Merl Hammons and nephew, Dr. M. R. Barbour.

HOFF — Conrad P., retired June 30, 1961, Dept. 62-1, died Aug. 7. Survived by his wife, Lillian.

KUTTICH — John, retired March 5, 1960, Dept. 401, died Aug. 19.

LETCHER—William M., Dept. 160 retiree (1963). Survivors include his wife, Ann.

NIEL—Paul S., retired April 3, 1959, Dept. 8-0, died Aug. 19. Survived by his wife, Evelyn.

SALAZAR—Frank J., Dept. 001, died Aug. 15. Survivors include his wife, Diana and two children.

SAUNDERS—Ray J., retired Sept. 28, 1962, Dept. 250, died June 24. Survivors include his wife, Kathryn.

SCARBROUGH — Lester O., Dept. 223-3; survivors include his wife, Christina; a son, Richard; and a daughter, Gaylene.

TABOR—Clarence A., Dept. 131-1, died July 14. Survivors include his wife, Asenath, three sons and two daughters.

VAN NESS—Thomas E., Dept. 046, died Aug. 22. Survivors include his wife, Donna and sons, Mike and Mark.

WEAVER — George L., retired Dept. 130-1, Aug. 13, 1963, died July 4. Survived by his wife, Edith.

WELCH — Ralph C., retired Nov. 8, 1963, Dept. 91-1, died July 25. Survived by his wife, Myrtle.

ZABOSKY—Paul J., Dept. 14-7 retiree (1962), died July 12. Survivors include his wife, Viola.

Rider-Driver

CONVAIR

RIDE WANTED — From Allied Gardens to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Call Frank Dewey (home) 582-7645.

RIDE WANTED — From Clairemont (near Quad) to Lindbergh Field plant, 8 a.m. to 4:45 p.m. shift. Call Claudia Huback, LF, ext. 630.

RIDE WANTED — From Nile St. in North Park to Lindbergh Field plant, 8 a.m. to 4:45 p.m. shift. Call Marea McGregor, ext. 2058 LF.

CAR POOL WANTED—From Oceanside to Lindbergh Field plant, 7:30 a.m. to 4:30 p.m. Call Nancy Stephens, ext. 2196 or 1264 LF or (home) 757-8538.

General Dynamics News

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Convair division editorial offices. Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Variety of Alternatives Explored, Says Davis

(Continued from Page 1)

and people we choose to man it must be able to move skillfully in either direction as circumstances dictate.

"Since geographical consolidation is neither desirable, practical, nor necessary at present, we are exploring a wide variety of alternatives in a two-plant organization structure which will provide for maximum flexibility in the deployment of our resources. . . ."

Davis said he was not quite ready to establish a "final charter" for the merged activity.

"The objective," he said, "is to facilitate employment of the entire resources of both Fort Worth and Convair to win new business and solve ongoing problems.

"In the battle for remaining aerospace business, we can no longer afford to fight with only one hand when there are two available. My job is to make us into one two-handed fighter rather than two one-handed fighters, thereby enhancing our road to the championship.

"I will decide how we should do this as soon as I become reacquainted with the Convair programs and people, and after I have sought a great deal of advice from those of you who will have to make the arrangement work when it is set up.

"I have every reason to believe that you people here at Fort Worth and those at Convair can and will make this a successful, fruitful, and mutually profitable marriage."

Davis said a badly strained national budget will make it difficult to obtain funds for more F-111 production beyond July, 1972.

"Nevertheless," he added, "national prudence suggests that some level of production be maintained on the only high-performance bomber aircraft to be built since 1962.

"Therefore, if SAC's operation experience with the FB-111 in these next few months is reasonably good, we believe there is still opportunity for additional FB-111 production. We are working with the Air Force and members of the Congress to encourage favorable consideration of this course.

"In addition, we have been conducting a research program for the past two years in cooperation with NASA and the Air Force developing a new technology directly applicable to improving F-111 performance."

Davis said a proposal for prototype development is in Air Force hands. He feels it will get "favorable consideration" in the near future.

"The improvements have also been designed to be retrofitable to existing aircraft so that an attractive modification program can be started to improve and update the F-111 inventory already available to the Air Force," he said.

Davis stressed that because of shrinking defense dollars, "we must drive down cost to the absolute minimum."

"Even with follow-on F-111 business," he said, "we must continue to reduce cost and manpower devoted to the program . . . ahead of the apparent need. Doing this may well be the price of survival over the next couple of years. . . ."

Davis said "excellent progress" is being made on the reinspection and proof-test program and that the Air Force was high on F-111s already returned to TAC and SAC.

(Davis is at Convair this week for a series of organization, product, and facilities briefings.)

Personals

We wish to thank everyone for the great kindnesses shown our niece, Catherine R. (Cathy) Spina, through her lingering illness and recent deathh.

The visits, the TV which was so generously provided, and the many cards brought her much cheer during her stay in the hospital. The beautiful floral arrangements which you sent were most comforting and deeply appreciated.

Please accept our sincere thanks.

Mr. and Mrs. Sam Sacco
(uncle and aunt)

* * *

Your kind expressions of sympathy and your beautiful floral arrangement were greatly appreciated.

Mrs. Clarence A. Tabor and family

* * *

Please accept our sincere thanks for all the many kindnesses that have been shown to us. It is so wonderful to know Del was thought of so highly and had so many friends.

Mrs. Delbert Meredith and Sharon

* * *

Your comforting expressions of sympathy were deeply appreciated by the family of Robert G. Ferris.

* * *

The family of Frank G. Merritt gratefully acknowledges your kind expressions of sympathy.

* * *

I wish to thank my Convair friends for their kind expressions of sympathy after the death of my husband.

Phyllis Zandi
Dept. 842-0

* * *

May I say thank you so very much for the lovely flowers you sent for Mr. Letcher's funeral.

Ann Letcher

* * *

Thank you sincerely for your thoughtful kindness at a time when it was deeply appreciated.

Sal Puelo and family

Lewis Reports GD Earnings in First Six Months

(Continued from Page 1)

cess of estimated income from business on hand in the Standard Missile program. We have every reason to believe that there will be additional orders in this program and that this work can be performed on a profitable basis.

"While we have made substantial progress at the Quincy Shipbuilding division," Lewis said, "improvements in productivity and cost reductions have not come as rapidly as predicted and accordingly we have determined that there will be increased costs beyond those previously provided for on Navy surface ship contracts. Also, we believe there may be cost overruns on the contract to build three commercial ships.

"During the first six months of 1970, we commenced to definitize claims for contracts adjustments, beyond those already taken into consideration in providing write-offs, with the United States Government involving contracts for construction of naval surface ships over a period of years, and the first of those claims for $22.3 million was filed in June. We presently estimate that the recoveries on all such claims will exceed the maximum amount of these increased costs. Accordingly, no additional write-offs at the Quincy Shipbuilding division have been made for the six-months period ended June 30, 1970."

The Board of Directors did not declare the regular quarterly dividend of 25 cents per common share for the second quarter. Lewis, in explaining the action, said: "The Board felt that in view of the liquidity problems confronting industry as a whole and the pressures which defense contractors are experiencing as a result of lower levels of appropriations and expenditures, it would be prudent to conserve cash at this time despite our earnings potential which continues to be sound."

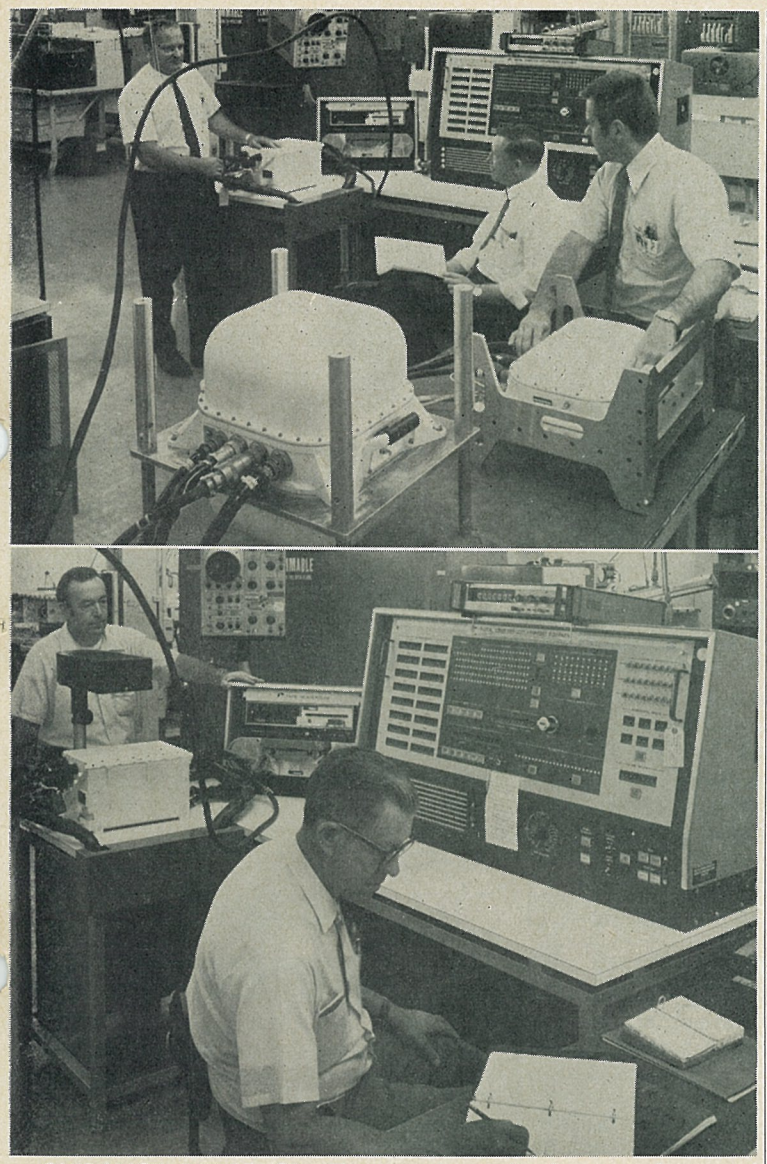
Death Takes Former Plant Security Chief

Frank G. Merritt, who retired in 1963 after more than 20 years as chief of plant police and manager of industrial security at Convair's Lindbergh Field plant, died Aug. 5. Services were held Aug. 8 at Greenwood Mortuary.

Merritt, widely known among veteran Convair employes, served on the San Diego Police Department 25 years before retiring as captain in charge of the police traffic division in 1942 to join Consolidated Vultee, Convair's predecessor firm.

He is survived by his wife, Dorothy, and a son, Rodney.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.



GUIDANCE INTERFACE—Three major units for new Improved Centaur D-1 guidance and flight control system, connected for initial integration test (top photo), are checked by, from left, Jim Lundquist of Teledyne, Ernie Luke of Convair, and Tom Kiernan of Honeywell. Cables connect inertial reference unit (left foreground) with digital computer unit (background) and inertial measurement group unit (right). In lower photo, Ron Blevin, left, and Wallace Eddy, both Convair senior electronics technicians, use checkout equipment for digital computer unit test.

Guidance and Control System For Improved Centaur Checked

Integration and checkout of the new state-of-the-art guidance and control system for Convair's Improved Centaur D-1 launch vehicle is progressing rapidly at the division's Kearny Mesa plant.

Improved Centaur is being developed for use with Atlas and Titan boosters for launch of a wide range of earth-orbit and interplanetary payloads.

The guidance and flight control system utilizes a digital computer manufactured by Teledyne Systems Co. and inertial measurement group equipment manufactured by Honeywell's Aeronautical division.

The digital computer unit (DCU) is a solid-state, core-memory device with a 16,000-word memory and a pulse-code modulation section.

In addition to performing normal guidance and navigation computations, the computer unit will generate attitude control signals for vehicle stabilization and control and direct sequencing of all in-flight events.

The pulse-code modulation section, under DCU program control, will interrogate remote multiplexer units for in-flight monitoring of critical flight functions and relay data in digital form to vehicle telemetry transmitters.

Programming of the DCU can be by punched paper tape or through computer controlled launch sets in Bldg. 4 at Kearny Mesa or at Complex 36 at the Eastern Test Range.

The inertial measurement group (IMG) consists of two units—an inertial reference unit and a guidance system electronics unit. Using a four-gimbal intertial platform, it provides the computer with discrete measures of platform inertial velocity and analog measures of vehicle attitude and rate.

Ernest H. Luke, Convair Dept. 989-2 senior electronics design engineer, said integration and checkout of the advanced flight control system and related development and computer programming has been underway several weeks in the Centaur guidance and flight control laboratory in Bldg. 5 at Kearny Mesa.

The IMG in the lab is operated through a computerized test set which has a memory drum of 96,000 words.

One of the test sets also is being maintained at the Honeywell plant in St. Petersburg, Fla.

"The IMG units must be calibrated periodically," Luke said. "The set in St. Petersburg also can be used for diagnostic trouble-shooting in the event a problem is encountered with an IMG unit at Cape Kennedy."

Assisting Convair personnel in integration and checkout of the guidance system and related equipment are James Lundquist, Teledyne resident engineer, and Thomas Kiernan, Honeywell resident engineer.

Initial integration and program development work was performed with "breadboard model" digital computer and system electronics units before first flight units were delivered.

Scale Model of Earth Surveyor Scheduled For Surface Travel

Convair division's new 1/20-scale model of a 14½-foot-diameter earth surveys experiment module will be doing a lot of earth-bound traveling during the next few weeks.

Wally Withee, director of advanced space systems, said the attractive module model will be exhibited Sept. 22-24 at the Air Force Association's 24th national convention in Washington, Sept. 25-26 at the Society of Experimental Test Pilots' 14th annual symposium in Beverly Hills, and Oct. 19-22 at the American Institute of Aeronautics and Astronautics' seventh annual meeting in Houston.

Previous showings have been for NASA and General Dynamics personnel in Washington and Huntsville.

The earth surveys module is one of 13 module designs developed by Convair in a recent study that can be produced economically, using three common module structures, for in-space use either attached to an orbital space station or free-flying.

Withee said the earth surveys module, officially known as an earth surveys sensors experiment laboratory, is designed to house 23 separate sensors.

It would be attached to an orbital space station since it would require frequent visits by man for analysis and updating for maximum benefit and would utilize basic subsystems of the space station.

The module, in addition to its experiment instrumentation, would house a sensor test and checkout work area, a laboratory area, and equipment needed for command and control, data acquisition, and processing functions.

Sensors that must be deployed from the structure for non-interference in their field-of-view would be retractable and enclosed within a sensor bay and elliptical dome when not in use.

The dome could be rotated closed and secured to permit pressurization of the bay for manned work on the sensors in a "shirt-sleeve environment" as needed.

Earth surveys module experiments could provide valuable data for research in agriculture, cartography, geology, geography, hydrology, hydrography oceanography, ecology, and similar fields.

Changes in vegetation, charting of snow cover and water runoff, mapping of shorelines, and sensing of air and sea pollution would be among many possible benefits.

"Experiment modules with common subsystems but varied experiments can be launched by space boosters or space shuttle vehicles and can provide technological and scientific breakthroughs to advance man's standard of living," Withee commented.

"The young scientist studying for his advanced degree as well as experienced scientists can push back research boundaries by utilizing experiment module labs designed to take full advantage of environmental characteristics available only in space."

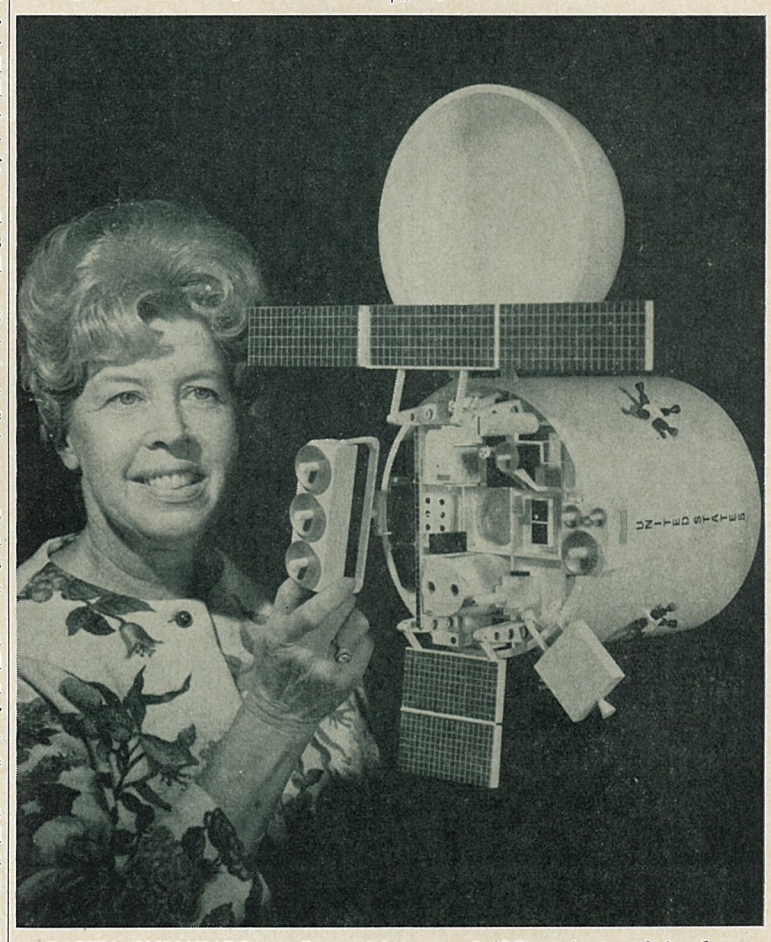
The Convair experiment module preliminary designs would support in-space research in areas including astronomy, space physics, space biology, earth applications, biomedicine and biotechnology, materials science, advanced technology, and engineering and operations.

Convair-developed experiment module concepts were outlined by Withee in June at the American Astronautical Society meeting in Anaheim. He also is to give a similar presentation Oct. 8 at the 21st International Astronautical Congress in Constance, Germany.

Withee said Convair has had more than $1 million in contracts for experiment module and related space technology studies during the past two years.

Phase B experiment module configuration and specification study contract proposals are expected from NASA late this year.

Preparations for Phase B proposal development already are underway under Withee's direction with Denis Powell, John Maloney, Dr. Kenneth Stone, and Francis Michael—each of which has headed one of the earlier studies — responsible for major proposal tasks.



EARTH SURVEYOR — Convair's new 1/20-scale model of proposed earth resources experiment module is checked by Helen Holland, secretary to Wally Withee, director of advanced space systems. Initial design concepts for 13 such scientific modules for in-space use have been developed in division studies.

Bowers and Prim Will Be Active In Key Posts For United Crusade

General Dynamics representatives will have key roles in the upcoming United Crusade to raise funds for support of 69 health, welfare, youth, and community service organizations in San Diego County.

Jack L. Bowers, Convair president, slated to head the new ordnance and electronics systems division, is overall Crusade vice chairman. Leonard Zanville, regional manager for Sears Roebuck and Co., is chairman.

Don Prim, manager of Electronics-SD, is chairman of the electronics section of the Crusade, which will include campaign efforts at 34 major firms.

George Leesch, manager of industrial relations for Electronics-SD, is vice chairman for the electronics section.

Harry Shirley, a project field engineer at Electronics-SD, has been working with United Community Services in advance planning for the campaign since Aug. 18 and will serve as a United Crusade loaned executive through Nov. 19.

Representing Convair as loaned executives Sept. 14 through Nov. 19 will be C. F. McMenamy, an educational specialist in Dept. 130-3, and Paul R. Green, chief of administrative support in Dept. 954-3.

The loaned executives will work full time from UCS headquarters in San Diego in contacting and assisting major business and industrial firms in their Crusade efforts. Shirley and McMenamy both have served as loaned executives in previous years.

Volunteers Sought to Aid Parolees

General Dynamics employes and their husbands and wives in the San Diego area are being sought to assist in a San Diego County Probation Department - sponsored Volunteers in Probation (VIP) program.

Gerry Sasek of Convair's Dept. 954-1 said volunteers are needed to provide friendship, cultural and recreational enrichment, educational tutoring, employment counseling, and similar assistance for probationers.

Sasek is providing math instruction for a group of young probationers. He also is a VIP "big brother" for a 15-year-old youth from a broken home who is on probation for a minor offense, new in the San Diego area, and doing poorly in school.

"Each volunteer is asked to donate a few hours each month," Sasek said. "Most often each is assigned one probationer. Orientation sessions are held and each volunteer works in conjunction with a professional probation officer."

Phone Sasek, ext. 1127 KM, or Beverly DiGregorio, 279-4100, for additional information.

DOUBLE HONORS—William G. Lux, right, a senior reliability engineer in Convair's Dept. 144-1, receives 15 and 20-award Cost Reduction Achievement pins and certificate from L. I. Medlock, director of reliability control. Lux had four employe suggestions and 16 cost reduction/value control projects approved since award program began last December.

Value Control Projects Slated To Reduce Production Costs

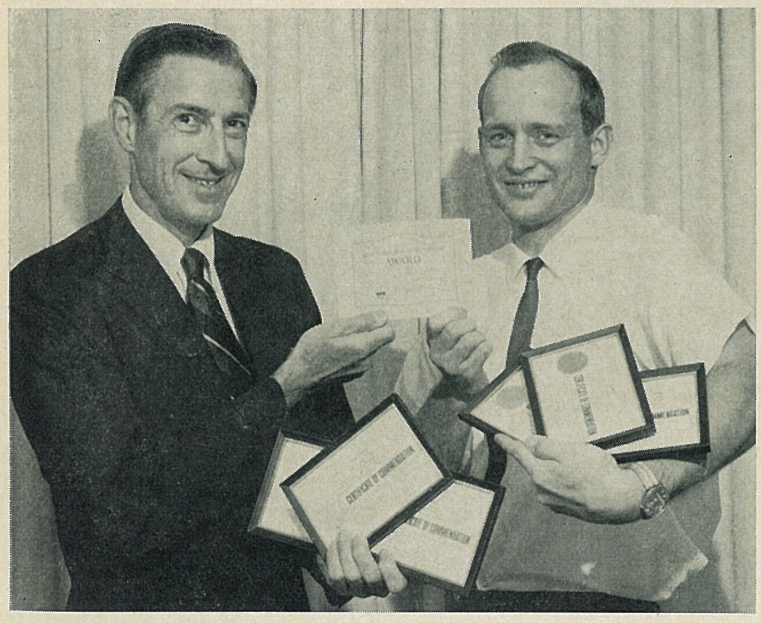
James K. Wyckoff, a senior design engineer in Convair division's Dept. 533-1, recently was awarded a five-credit Cost Reduction Achievement pin and six certificates of commendation for value control projects on the DC-10 program expected to reduce production costs by $218,800.

Each of the implemented projects involved substitution of castings or forgings for totally-machined parts to reduce machining time. All resulted from value engineering study evaluations.

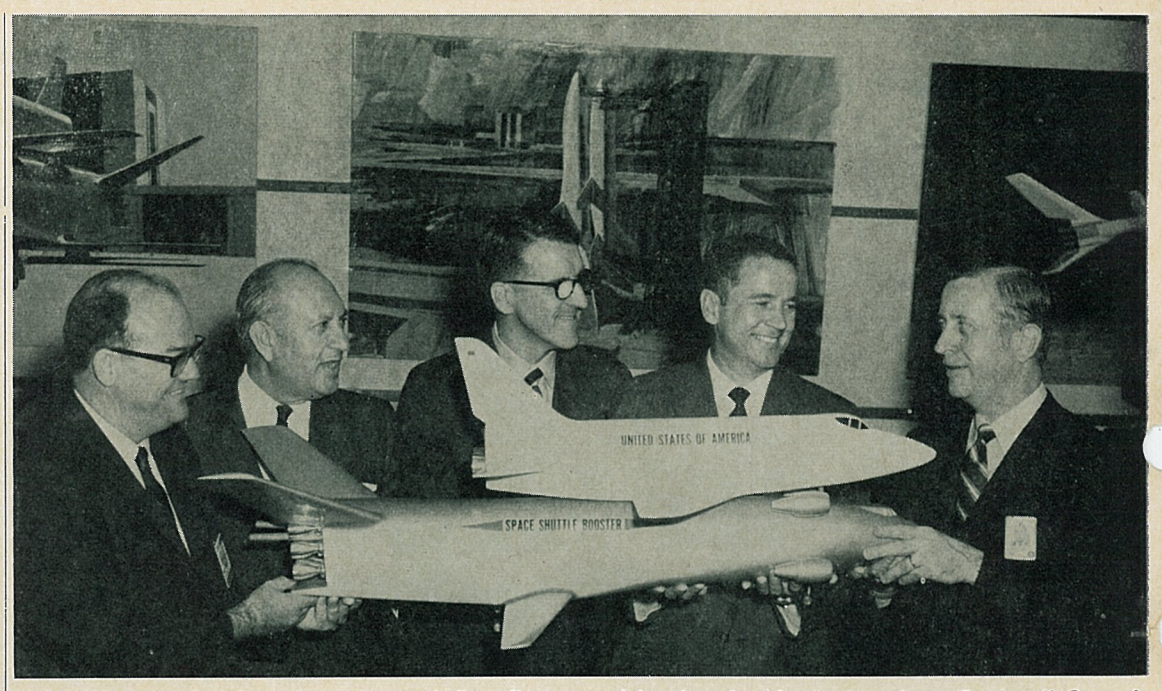
Wyckoff, a 1962 graduate of Iowa State University, received his master's degree in mechanical engineering in June from San Diego State College.

He spent two weeks last month at the University of Colorado attending special courses on "Principles of computer-aided mechanics design" and "Optimal distribution of errors in mechanism design."

He is now assigned to the Atlas-Centaur propulsion section and formerly worked on A-X, S-3A, F-111, and DC-10 tasks.



MULTIPLE AWARDS—F. D. Applegate, left, Convair director of product design, presents Cost Reduction Achievement pin and six commendation certificates for value control project savings on DC-10 program to James Wyckoff, Dept. 533-1 senior design engineer.



SHUTTLE LEADERS — Executives of five firms participating in North American Rockwell-Convair Phase B space shuttle study look over models of mated booster and orbiter shuttle vehicles during meeting at Convair. From left are Dr. Donald Dooley, Convair vice president - space programs; Cy Gilbert, American Airlines vice president; Lincoln Hudson, Honeywell space shuttle program manager; Jerry McCall, IBM manager of space transportation systems; and Bastian "Buz" Hello, North American Rockwell vice president and general manager-space shuttle program.

Quality Engineer Certification Awarded R. D. Brant of Electronics

R. D. Brant has become the second Electronics-SD employe to receive quality engineer certification from the American Society for Quality Control.

A quality control engineer, Brant earned the ASQC certification through a competitive examination given by the professional society at Mesa College. The broad ASQC test covered quality procedures relating to statistics and probabilities, quality planning, inspection and testing, experimental designs, metrology, and data processing.

First at Electronics-SD to receive ASQC quality engineer certification was Vito Sardo, a senior quality control engineer, who was recognized at an April meeting of San Diego ASQC section. **(GD/NEWS, April 29, 1970.)**

Brant has been with Electronics-SD since 1967 and is assigned as the quality assurance representative for the advanced radar group and the microelectronics laboratory. Previously, he spent 14 years with Convair division including five years at the Sycamore test site and five years at Vandenberg where he served as inspection supervisor and quality control engineer.

He holds an associate in arts degree in math and physics and is currently taking courses at San Diego State College towards a BS in physics.

Wendell J. Wilkinson, chief, quality assurance division, DCAS-San Diego and chairman of the San Diego section of ASQC, presented Brant his Certified Quality Engineer certificate in ceremonies last month with R. H. Nicholson, Electronics - SD manager of quality control.

Halfacre Exhibits Pistol Proficiency

Jim Halfacre and Red Schneider took first and second place honors, respectively, in CRA Pistol Club's .22 calibre police course firing Aug. 9 at the San Diego Police range. Top scores in expert class were fired by Bill Dittmann and Paul Pemberton.

Leaders in center-fire short national course competition were Jerry Lehrer, first; Schneider, second; Halfacre, third; and Ernie Kampmann, fourth.

CERTIFIED — R. D. Brant, Electronics-SD, center, accepts Certified Quality Engineer certificate from W. J. Wilkinson, left, DCAS-San Diego and chairman of San Diego section of ASQC. At right is R. H. Nicholson, Electronics-SD manager of quality control. Brant is second at Electronics-SD to earn quality engineer certification.

Convair's Bob Vogler Honored As 'Packaging Engineer of Year'

Robert J. Vogler Jr., a packaging specialist in Convair division's Dept. 202-2, has been awarded the William Arnold perpetual trophy for 1970 by the Southern California chapter of the Society of Packaging and Handling Engineers (SPHE).

Vogler was selected for the award, named in memory of a pioneer Douglas Aircraft Co. packaging engineer, by SPHE past presidents and previous award winners as chapter member "most successful during the award year in developing and applying packaging techniques and materials."

"PACKAGE" ACCOLADE—Bob Vogler of Convair's Dept. 202-2, looks over William Arnold trophies awarded him by Southern California chapter of Society of Packaging and Handling Engineers. Largest of two is perpetual trophy.

The award, consisting of a large perpetual trophy and a smaller permanent trophy, was presented Aug. 10 during an awards banquet and meeting in Los Angeles.

Vogler has been in the packaging and materials handling field 20 years and has won several national awards for Convair for packaging and material handling innovations he has instituted during the past 10 years.

He has been chairman for five years of an Aerospace Industries Association (AIA) committee that has developed more than 50 vendor packaging standards for government and the aerospace industry and has been updating National Aerospace Standards issued several years ago.

E. Warren Fedderson, General Dynamics' director of manufacturing and facilities services, is sponsor for the committee.

Vogler also has been serving on the national Electronics Industry Association (EIA) packaging committee and as an EIA task chairman for developing electronics packaging standards in coordination with AIA-developed standards.

He is AIA packaging and handling committee liaison representative to the Defense Electronic Supply Center in Dayton, Ohio, which controls preservation and packaging specifications for electronic parts for the military services.

Vogler also was cited by the Southern California SPHE chapter for his conscientious attendance and participation in monthly meetings in the Los Angeles area and for having encouraged eight other San Diego area packaging engineers to become chapter members.

A San Diego SPHE chapter is being organized. Forty-five prospective members attended an initial organizational planning meeting in July.

Vogler said the materials packaging and handling engineering section of Convair's industrial engineering department, under W. E. Wise, has been recognized as a leader in its field for several years.

"The honor I received in being awarded the Arnold trophy should be shared by the division and particularly by other members of the materials packaging and handling engineering section," he said.

Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, Sept. 19. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. No canvas or open-toed shoes and no bare feet.

Basquez Given Marketing Duty

Joseph Basquez, who during 13 years as an Air Force pilot accumulated 3,000 hours of flight time in 45 different types of aircraft before joining Convair division last year, has been named assistant marketing manager-military programs.

Basquez reports directly to E. J. Hopley, director of marketing, and will be responsible for supporting three marketing managers for military programs—James Woolnough, Gordon Siegel, and Thomas Sullivan.

Lyman C. Josephs, Convair vice president and general manager, said Basquez will assume full responsibility for AX marketing during Woolnough's absence to attend the Harvard University graduate School of Business Administration's Program for Management Development.

Basquez was commissioned in the Air Force after completing ROTC and receiving his bachelor's degree in business administration from Southern Methodist University in 1954.

He attended Air Force primary, jet, and helicopter flight schools and later, as an Air Force officer, attended a Navy test pilot's school.

Before leaving the Air Force as a major and joining Convair as a V/STOL advanced design engineer, Basquez served on the tri-service test force for military evaluation of V/STOL concepts at Edwards AFB.

He also holds a master's degree in aeronautical engineering from the Air Force Institute of Technology and a master's in business administration from Golden Gate College in San Francisco and is a registered professional engineer.

RECEPTION CENTER—Renovation of Bldg. 5 lobby, focal point of vendor representative visits at Lindbergh Field, was completed last month. Barbara Freeman, seated at desk at left, prepares necessary credentials in signing in Don DeWolfe of Beaumont Precision Co. Manning other desk is Lillian Truex, security receptionist.

AN ACTIVE DAY—Although, as usual, the kids provided much of action at annual Convair Mgt. Association-CRA picnic, adults had their share of fun. Photographer Pete Autio, with fine touch of human interest, captured these scenes on film. Picnic was held at Missile Park.

CRA 'Hams' Await Call From Kin of Mutineer

Members of the CRA Amateur Radio Club are planning to talk by radio to Tom Christian on Pitcairn Island during their meeting at 7:30 tomorrow evening (Sept. 3) in the CRA Clubhouse.

Christian is the great, great, great, great grandson (honest!) of Fletcher Christian who led the mutiny on the HMS Bounty.

In addition to the call from the South Pacific, those attending will see a color film, "The Wake of the Bounty," and color slides of Pitcairn Island today with a tape recorded narration by Christian.

Dennis Scannell of the club said Tom Christian was educated in New Zealand and operates a British communications station as well as his amateur station, VRGTC.

All amateur operators and other interested employes and family members have been invited to attend.

Willems Low In CRA Golf

Chub Willems carded a low gross 73 and a trio of linksmen fired low net 66s in Flight A to highlight last month's CRA Golf Club tourney at Coronado.

The low net winner, determined by matching cards, was Charley Maikish. Ed Rincon was runner-up and Ray Demitrowicz finished third.

Other flight winners:

2nd Flight — Harold Wilson, gross 82 and Joe Turner, net 67; 3rd Flight—Woody Ross, gross 86 and Bill Bennett, net 69; 4th Flight — Ray Trussel, gross 86 and Gene Laird, net 70; 5th Flight—R. Latimer, gross 91 and Jim Duffy, net 67; 6th Flight—Stan Brown, gross 94 and Harold Easter, net 63.

In a special event, Jerry Swarts, John Beamer, and Bill Geopfarth took awards for tee shots coming closest to pin.

Next CRA links tourney is scheduled for Sept. 19 and 20 at Meadows Country Club near Escondido. Starting times will be assigned beginning Wednesday (Sept. 9) by calling KM ext. 1111.

Linkswomen Slate Sept. 12 Tournament

General Dynamics linkswomen have scheduled a Sept. 12 tourney at Whispering Palms with tee-off time set for 8:30 a.m.

In last month's tournament at Coronado, Agnes Sliger carded a net 66 to take first place trophy. Merchandise certificates went to Freda Magargal and Joan Sjoblom and Jeannine Letzring won a special event (low gross on the first nine).

Reservations for the upcoming Whispering Palms tourney can be made by calling Doris Parker, LF ext. 583.

Big Bear Trip Reservations Due

Reservations are being taken from interested General Dynamics families for the Sept. 18-20 autumn weekend at Big Bear Lake being sponsored for the 17th consecutive year by the CRA Ice Skating Club.

As usual, the club has leased Wawona Lodge and will have 11 rooms with private baths in the lodge to accommodate 2 to 5 people each and 17 cabins for family groups of up to 12.

Five meals will be included in the weekend package—breakfasts Saturday and Sunday, a poolside buffet lunch Saturday, a barbecue dinner Saturday night, and leftovers for Sunday noon snacks. A no-host social hour will precede the Saturday dinner.

Cost is $16 per person with children under eight at half price. Individual arrangements must be made for transportation to and from the lodge.

Checks should be made payable to CRA Ice Skating Club and can be submitted through the employe benefits office at Lindbergh Field or the CRA Clubhouse at Kearny Mesa.

Deadline for reservations is Sept. 11 and no refunds will be made after that date.

Wawona Lodge has a swimming pool. Other activities available in the area include horseback, mini-bike, and bicycle riding; boating and fishing; hiking; and ski-lift sightseeing.

Additional information on the Big Bear weekend and accommodations can be obtained by calling Davies, ext. 2844 KM; June Reiger, ext. 1111 KM; or Joan Kosen, 274-5227.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 KM. Deadline for next issue of GD/NEWS is Sept. 8. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

ADVENTURERS—Meet 7:30 p.m., Sept. 16.

BADMINTON—Play 7-10 p.m., Mondays, Federal Bldg., Balboa Park.

BONAIR FLYERS—Meet 7:30 p.m., Sept. 3.

BRIDGE — Duplicate bridge sessions, 7:30 p.m., each Friday.

CHESS—Play 7 p.m., Sept. 9.

CHORUS—Rehearsals 7:30 p.m., Mondays.

COINEERS—Meeting 7:30 p.m., Sept. 14.

COUNTRY & WESTERN MUSIC — Meet 7:30 p.m., Thursdays, CRA Missile Park picnic shelter.

DELTA DIVERS — Meet 7:30 p.m., Sept. 9.

FENCING — Workouts and instruction 7:30-10:30 p.m., Fridays. YWCA, 10th & C Sts.

GARDEN CLUB—Meeting tonight (Sept. 2) 7:30 p.m. Floral Association Bldg., Balboa Park.

GOLF—The Meadows tournament Sept. 10-20.

HEALTH CLUB—Open 9:30 a.m.-10 p.m., Monday through Thursday; 9:30 a.m.-9 p.m., Fridays; 10 a.m.-5 p.m., Saturdays; "women only," weekdays 9:30-11 a.m.

HI-FI MUSIC—Meet 7:30 p.m., Sept. 8.

ICE SKATING—Annual Big Bear weekend, Sept. 18-20. GD family skate night 6:15-7:45 p.m. each Thursday, House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1 (includes skates).

MINIATURE RAILROAD — Operating sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD — Work sessions 7 p.m., each Wednesday, CRA Missile Park.

PISTOL CLUB—Shoot 9:15 a.m., Sept. 13, San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB — Meeting 7:30 p.m., Sept. 3.

RIDING CLUB — Meeting 7:30 p.m., Sept. 9.

RIFLE CLUB—Senior shoot 7 p.m., Sept. 9. Junior shoot 9 a.m., Sept. 5. Gillespie Field Range.

ROCKHOUNDS — Meeting 7:30 p.m., Sept. 9.

SPORTS CAR CLUB — Meeting 7:30 p.m., Sept. 9.

SQUARE DANCE — Dance 8-10 p.m., Thursdays.

STAMP CLUB — Meeting 7:30 p.m., Sept. 8.

SWIMMING—GD family swim night 7-9 p.m., Sept. 19, Mission Beach Plunge. Tickets at employe benefits, 5 cents.

TOASTMASTERS — Convair toastmasters meet 4:30 p.m., each Wednesday. Dynamic toastmasters meet 5:30 p.m., Thursdays.

TRAILBIKE—Meeting 7:30 p.m., Sept. 10.

WOMEN'S GOLF — Whispering Palms tourney, Sept. 12. Tee-off set for 8:30 a.m.

ANGLERS PLAN OUTING, PICNIC

CRA Fishing Club members have scheduled a surf fishing outing and picnic Sept. 12 at South Mission Beach. The potluck affair will be in early evening so that club members can fish the incoming tide.

Young and Old Guests Frolic at Annual Picnic

Almost 4,000 Convair employes and family members spent Aug. 9 at the big Convair Management Association and CRA - sponsored annual picnic at Missile Park.

Barbecue beef dinner with corn on the cob was rivaled only by the day's entertainment that included games and contests for all ages, a stage show with dancing girls and acrobatics, water "dunking" of executives to raise scholarship funds, exhibitions by gunfighters, and rock music.

Attendees ranged from babies to 94-year-old Pearl Donavon who came with her granddaughter, Carmen Donavon of Dept. 956-0.

Believed hailing the farthest away was June Mawdsley from Liverpool, England, a guest of the Jim Scott family.

"Volunteers" sitting at least momentarily, on the collapsible seat of the water dunking machine included a bevy of girls in bikinis and J. M. Adamson, Charlotte Bowen, Joe Bowers, Jess Cook, Bill Chana, H. B. Day, Del Dimmitt, Al Gates, Jack Hurt, Richard Keehn, Robert Miller, Bill Ochodnicky, and W. L. Van Horn.

For 25 cents for the scholarship fund, participants got three chances to hit a bull's eye with a baseball to drop the "volunteer" into a tub of water.

Aureliano Hijar, a retired Dept. 31 employe, took home the adult door prize—a large color TV set. Kevin DeShazo, son of Jim DeShazo of Dept. 958, won the children's drawing for a portable TV.

Among other award winners were Bob Ames of Dept. 195, beer bar; John Perry of Dept. 954, dinners at the Palais 500; Georgann Wheat, whose husband, Jim, works in Dept. 578, poker table; and Tom Parmarter, Dept. 731, golf clubs.

Bob Ratliff, chairman, was assisted by about 100 members of the Management Association and CRA staff in planning and directing picnic events.

Jim Cluck in Luck; Gets Hole-in-One

Jim Cluck, a security guard in Convair's Dept. 131-1, scored a hole-in-one on the three-par, 161-yard 14th hole while golfing with two friends Aug. 23 on the Miramar Naval Air Station course.

"I was using an old beat-up ball because there's a water trap in front of the 14th hole and I had lost several balls there before," Cluck commented. "We saw the ball roll right to the hole—just like it had eyes. I could hardly believe it."

Cluck has been golfing about a year and a half, playing in the same threesome each Sunday and usually playing two or three other days a week before going to work on the night shift.

He will receive a plaque from the Navy and a hole-in-one trophy from Jessops' Jewelers for his "once in a lifetime" fete.

Varied Classes Start In-Plant

Many General Dynamics employes will start back to school the week of Sept. 14 in varied in-plant three-unit courses offered by San Diego Evening Colleges.

A new curriculum in production technology includes two new courses: Manufacturing Profit and Expense Control and Machine Tool Technology. The new major was designed to further the skills and training of production people in non-supervisory positions.

A special second-shift Effective Writing class will be offered Thursdays from 12:15 to 3:15 p.m.

Additionally, Management and Organization, Shop Math II, Human Relations 1, Introduction to Supervision, Industrial Blueprint Reading, Effective Writing for first-shift, and Industrial Economics will also be offered at the LF plant.

Math for Electronics and Problems in Occupational Safety will be given at the KM plant.

For details and pre-registration call Mary Carter of educational services, ext. 2564 LF.

Sports Car Drivers Will 'See' Daytona

A feature film, "24 Hours at Daytona," will highlight the Sept. 9 meeting of the Convair Sports Car Club in CRA Clubhouse.

Showing of the spectacular 1968 endurance race will begin at 7:30 p.m. Refreshments will be served and members will nominate officers for the coming year.

Club event for September is a "members only" free dynamometer engine performance check at Cardoc on Sept. 16.

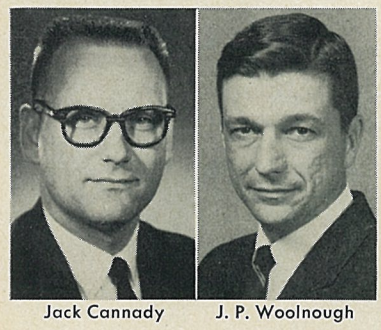
Harvard Study Ahead for Two

Two Convair executives have been accepted for special management programs beginning Sept. 13 at Harvard University's graduate School of Business Administration.

Jack C. Cannady, manager of estimating for the division since 1968, will attend the Advanced Management Program for 37 to 50-year-old executives with 15 to 20 years of business management experience.

J. P. Woolnough, marketing manager-military programs since transferring to Convair from General Dynamics' Washington office in May, will attend the Program for Management Development for 28 through 36-year-old executives with 5 to 10 years of business management experience.

Cannady attended San Diego



Jack Cannady J. P. Woolnough

State College and joined Convair in 1954 as a material cost analyst. He became chief of administrative support in 1957, chief of cost control in 1960, and manager of finance, scheduling, and administration for launch vehicle programs in 1962.

Woolnough was graduated from the U.S. Military Academy in 1957 and later attended infantry, airborne (parachutist), fixed-wing flight (pilot), and transportation schools.

After earning a master's degree in aeronautical engineering at Georgia Institute of Technology in 1962, Woolnough served as an Army airfield operations officer in Paju-Ri and Munsan-Ni, Korea.

BANNER WINNERS—John Wild, director of engineering technologies, center left, presents Convair research and engineering department Craftsmanship achievement banner to Bill Sutherland for materials and processes test services group. Holding related plaque, right front, is Abe Hurlich, manager of materials and structures technology.

Dept. 572-3 Takes Quarterly Research, Engineering Banner

Convair's materials and processes test service group, Dept. 572-3, has been awarded the research and engineering department's Craftsmanship achievement banner for outstanding performance during the second quarter this year.

John M. Wild, director of engineering technologies, presented the perpetual banner and permanent award certificate Aug. 18 to Bill Sutherland, test lab group engineer, and employes of the department at Kearny Mesa. A similar presentation was scheduled later for employes at Lindbergh Field.

Wild lauded the test services group for having met or exceeded meaningful goals during the three month award period.

Sutherland said the group had increased its volume of chemical analysis and similar test activities for outside small business firms, reduced expense for lab operating supplies, and reduced time required for performing tasks and time for job turnaround.

Housekeeping and safety achievements, reduction in timekeeping errors, reduction in cost for some lab services, and Employe Suggestion and Cost Reduction Project submittals also were considered.

Convair Picked For Study of Rocket Stage

Convair has been selected by NASA's Goddard Space Flight Center to conduct an 8-month design study on a high-energy Versatile Upper Stage (VUS) rocket that will substantially increase the orbital capability of current launch vehicles and can be used as an expendable stage with the space shuttle.

A fixed-price contract to be negotiated for the study is expected to cost about $250,000.

The VUS will be designed so it can be placed atop boosters such as the Titan III/Centaur and Thor. It will include a retro propulsion capability for orbiting outer planets of the solar system.

An upper stage like VUS would more than double the payload capability of NASA's current Delta launch vehicle. A payload increase of more than 50 per cent would be possible with a Titan III/Centaur/VUS vehicle for outer planet missions.

Larry Nelson, a systems engineering specialist in Convair's Dept. 952-5, will be study manager, reporting to Mel Barlow, manager of program development for Convair launch vehicle programs.

Key study leaders will be Allen Walburn, analysis; Bill Ketchum, propulsion systems; Gordon Stone, operations analysis; and Ray Crupi, configuration.

"We will start with an analysis of a whole family of possible configurations and eventually narrow the field to one recommended configuration," Nelson said.

"Several high-energy propellants—including liquid hydrogen, fluorine and methane—and hybrid propellant systems will be considered."

VUS could be used for low earth orbit, synchronous orbit, planetary, and interplanetary missions being planned for the late 1970s and early 1980s.

Nelson said Convair received a request for a proposal for the study from NASA-Goddard April 21, submitted a proposal June 1, and was selected to perform the study from among four companies that had submitted proposals.

Dr. Reda Named To Study Post

Dr. Dan Reda, a senior thermodynamics engineer in Convair's Dept. 584-0, has been appointed a National Research Council resident research associate for a one-year study at NASA's Ames Research Center at Moffett Field, Calif.

Dr. Reda

He will conduct basic research on shock wave/boundary layer interactions while assigned to the air breathing propulsion branch of the Aeronautics division at NASA-Ames beginning Sept. 21.

Shock wave/boundary layer interactions are basic phenomena experienced when aircraft fly faster than the speed of sound.

Reda received his PhD from Rutgers University. Since joining Convair in June, 1969, he has been working on space shuttle independent research.

Toastmasters Plan 2 Speech Courses

Two Speechcraft courses have been scheduled by Convair Toastmasters Club 3745 primarily for members of Convair Management Association and Electronics-SD Management Club.

The first course, scheduled for Convair personnel, will be held Tuesdays, Wednesdays, and Thursdays for two weeks beginning Sept. 15 in the Bldg. 2 presentation room at Kearny Mesa.

The course for Electronics-SD people will be held Tuesdays, Wednesdays, and Thursdays for two weeks beginning Sept. 29 in the Bldg. 5 engineering auditorium at Lindbergh Field.

Tuesday and Thursday sessions will be from 4:30 to 5:30 p.m. Wednesday sessions will be from 4:30 to 6:30 p.m. and will incorporate regular weekly meetings of the Toastmasters Club at the class locations. The club normally meets in the CRA Clubhouse.

Cost will be $3 for members of the management clubs and $5 for others.

Harvey Seibert, the Toastmasters Club's educational vice president, said each session will cover different aspects of speech preparation, speaking, and leadership.

Twenty different subjects will be presented, each by a different member of the club. Hal Story, District 5 area governor, will be keynote speaker.

EZ DUZIT

Thompson Named To Adams' Staff

J. F. Thompson Jr., former supervisor of engineering planning and control for Convair's research and engineering department, has been appointed director of engineering administration and services (Dept. 520-0).

Thompson

Thompson serves on the staff of R. E. Adams, vice president-research and engineering. Functions under his direction include graphic services Dept. 515-0, project and design planning Dept. 526-2, space shuttle support Dept. 526-0, management systems and

Ferrara Bergstrom

services Dept. 524-0, and resources planning Dept. 520-1.

John S. "Jack" Bergstrom has been named assistant program manager for the DC-10 program (Dept. 210-0), reporting to Jack Hurt, program manager.

Paul D. Ferrara has been assigned as chief project engineer (Dept. 514-0) with responsibility for F-111, F-102/106, Standard ARM, and Douglas Aircraft Co. support functions.

Thompson joined Convair in 1963 as an engineering planner after earning his Master of Science in Industrial Management degree from Georgia Institute of Technology.

After later service as an industrial management trainee and program planner, he had a special assignment at General Dynamics Headquarters in 1967.

He then had a special assignment at Quincy Shipbuilding division as assistant chief of management control for the LHA assault ship proposal with responsibility for contract definition cost and schedule control.

He returned to Convair in January, 1968 as leadman for engineering planning and control. He became supervisor for engineering planning and control in May, 1968.

Bergstrom joined Convair in 1940 as a mechanical draftsman and has held numerous positions on division aircraft programs since that time.

He became a group engineer in 1942, a senior design engineer in 1950, a design group engineer in 1952, director of advanced design in 1963, and project manager-aircraft programs in 1965. He has served as chief project engineer since 1966.

Ferrara joined the division as a draftsman in 1939 and also held numerous engineering positions before being assigned as chief engineer-administration in 1963 and director of engineer administration and services in 1964.

He became a group engineer in 1946, senior design group engineer in 1951, chief design engineer in 1958, assistant chief engineer-administration in 1959, and program director-engineering for the Centaur program in 1962.

Reorganization Plan Explained In Message From Roger Lewis

(Continued from Page 1)

changes which will enable us to realize these goals.

How, then, will these changes be carried out?

Our reorganization will be carried out in two time-phased steps. In Phase I, effective immediately, six divisions — Convair, Fort Worth, Pomona, Electronics, Electric Boat, and Quincy—will report to Dr. George Mueller who has a distinguished record and who as associate administrator of NASA led the team that put man on the moon. During this phase these divisions will continue to operate separately, while giving us the benefit of combined thinking and joint planning for our next important step —Phase II.

In Phase II, we will restructure four divisions—Fort Worth, Convair, Pomona, and Electronics —so that we will have two major divisions in place of the present four. One will be for aircraft and space activities, the other for ordnance and electronics systems. These are natural and logical "pairings" which let each of the present divisions draw on the individual strength of the other, while combining for greater customer impact. The important thing is to understand that any consolidation of personnel and facilities will come only after careful consideration or as new or different product opportunities present themselves. In short, it will take time—time to consider each product line and program in terms of its present and future importance—time to match our Corporate resources and organization to those programs—time to ensure that we have explored all alternatives—and time to be certain that we will have in hand the very best organization with the highest technological competence. That is why I have placed our top managers, Dr. Mueller, Jack Bowers, and Frank Davis, in charge of Phase 2 planning, and that is also why I have not stated a precise timetable for accomplishment. Doing it right is the key thing.

In summary, these are the main points to keep in mind:

- We are making changes now which give us the opportunity to shape events rather than be shaped by them at a later date.
- The changes will be orderly and accomplished over a period of time.
- Our plan recognizes that the strength of General Dynamics has been, and will continue to be, its people and their technical ability —the ability to solve complex problems quickly and capably.
- Our plan has as its central theme the assumption that General Dynamics will continue to maintain and strengthen its position as a major supplier of aerospace and defense products—we are in this business to stay.

One last thought. Change is not new to General Dynamics. In fact, it is a way of life. The very definition of the word dynamics means change—change characterized by energy, force and productivity.

The history of General Dynamics is a record of its ability to change, respond and produce. The company demonstrated this ability when it launched this nation's first manned orbital flight and built the first supersonic bomber, first intercontinental ballistic missile and first nuclear submarine.

In each case, when a new threat arose or a new requirement presented itself, our technology moved to meet that threat or fill that need. New challenges will arise in the future and I believe this reorganization will give us the strength we need to meet those challenges.

Craftsmanship

Do Good Work

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

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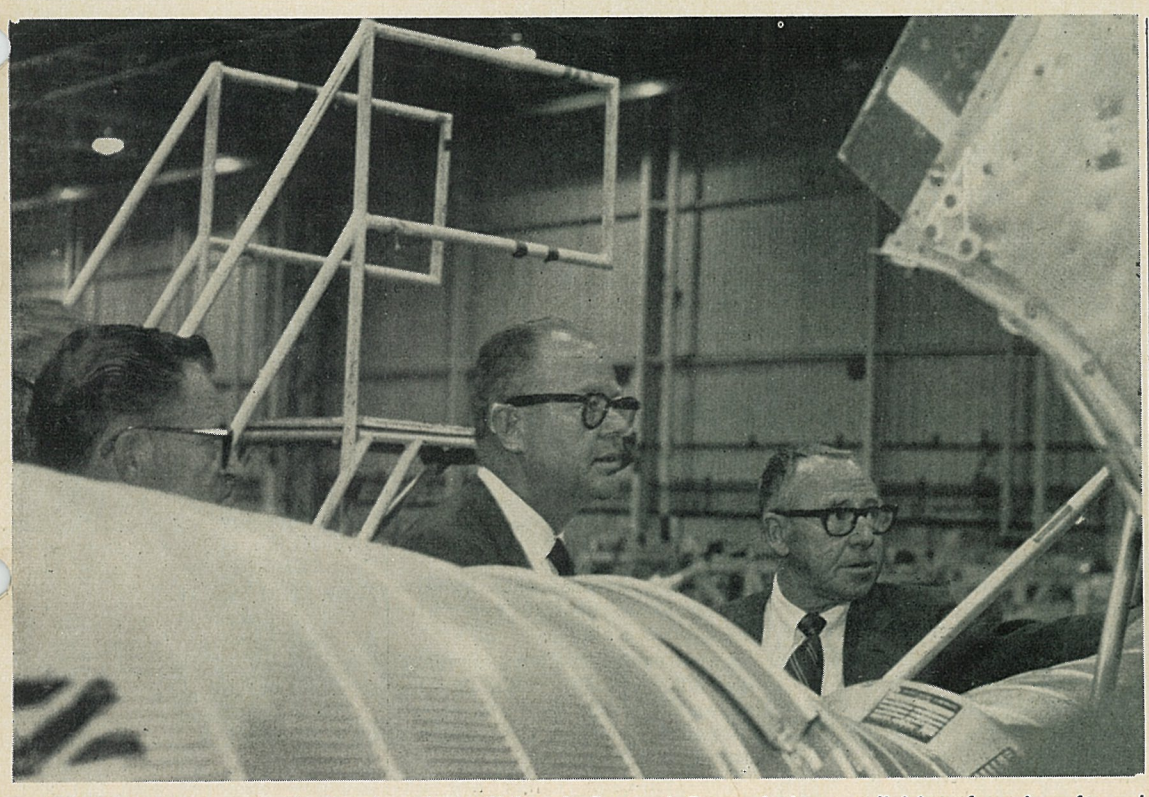


DAVIS VISIT—Frank W. Davis, who will head General Dynamics' new division for aircraft and space activities, saw Atlas and Centaur final assembly line during visit to Convair early this month. Above he is briefed by Maynard Bjorstrom, left, final assembly general foreman, and Deane Davis, Centaur program manager.

MISSILE TALKS—Jack L. Bowers was at Pomona recently for a series of product, facilities and organization briefings. From left: L. E. Spear, vice president—plans and programs; Jack Mason, vice president—operations; C. D. Perrine Jr., executive vice president; Bowers; Frank O. Chesus, program director, Standard Missile.

DC-10 'Quiet, Smokeless' During Maiden Flights

Flight tests of the first DC-10 with its Convair-built "wide-bodied fuselage of the future" have shown the craft to be a "real winner," McDonnell Douglas and Convair officials report.

Jack Hurt, Convair DC-10 program manager, said excellent progress is being made in the flight test program with no major problems.

The first DC-10 used less than one-half of the 10,000-foot Runway 12 at Long Beach at 90 per cent of available power on takeoff for its 3-hour 26-minute maiden flight Aug. 29.

Those on hand for the historic flight were impressed by the apparent total lack of smoke from the DC-10's three 40,000-pounds-thrust engines and by the low noise level generated by the aircraft.

Although no official noise level measurements were made, observers 75 feet from the runway said the DC-10 seemed to generate only about half as much noise on takeoff as did the Jet Commander and F-4 chase plane that preceded it.

Some 2,300 data system measurements were made on the maiden flight, which took the DC-10 over Catalina Island and Ventura and to 30,000-feet-altitude before its landing at Edwards AFB.

Present from Convair to watch the first takeoff from the "Blue Tower" at Douglas with McDonnell Douglas officials were Lyman Josephs, Convair vice president and general manager; Hurt; Pat Carlton, production control representative; and three Douglas representatives at Convair—Roger Cyr, Harold Loper, and Frank Labac.

The DC-10 carried a pouch of "first flight" letters, now considered collectors' items, which described the DC-10 and were mailed at Edwards to selected individuals across the country.

Hurt said the first seven flights from Edwards AFB produced "very satisfactory test results." Additional flight tests were scheduled to begin this week from Long Beach.

When it enters airline service late next year, the DC-10 will

(Continued on Page 2)

Salaried Personnel Get Added Benefit

Convair division and Electronics-SD salaried personnel will have their dependents' medical insurance premiums paid by the company effective with the payroll period beginning Sept. 28.

Premiums for the dependents' medical coverage previously has been deducted from each salaried employe's payroll check. In the case of Convair salaried personnel, this has been $1.34 for each biweekly pay period.

Difference in amount of deduction will be reflected first in checks distributed by Electronics-SD on Oct. 9 and by Convair on Oct. 16.

DC-10 Contract Includes VE

Convair division's DC-10 contract with McDonnell Douglas has been amended to incorporate a value engineering clause under which the division will receive 50 per cent of savings from imple-

(Continued on Page 5)

LIFTOFF—First DC-10 with 20-foot-wide Convair-built fuselage lifts off runway at Long Beach on maiden flight. Fifteen airlines already have placed orders for the DC-10, which is scheduled to enter commercial service late next year.

Atlas Modification Transferred to VAFB

Convair will shift refurbishment and modification of old Atlas E and F missiles from the division's Kearny Mesa plant to Vandenberg AFB.

Curt Johnston, deputy program manager for Atlas E and F modification and launch services, said implementation of the Vandenberg Atlas modification program (VAMP) will permit full utilization of launch crews between launches and is expected to save the Air Force more than $700,000 under the present modification contract alone.

"Impact on the current work force at the Kearny Mesa factory is expected to be negligible since we have 19 new Atlas SLVs on order," Johnston said.

"It will eliminate the need to employ additional people for modification work in San Diego. Engineering support and component manufacturing will still be provided from the Kearny Mesa plant."

Three Atlas F-series missiles, all stored since being removed from Strategic Air Command operational inventory several years ago, will undergo modification and IRAN (inspect and repair as needed) at Vandenberg under the current contract.

The first will be Atlas 31F, already at Vandenberg; 102F, scheduled for delivery to VAFB this month; and 78F, slated for delivery to VAFB early next year.

Johnston said a continuation of VAMP through the 1972-73 time period, based on present launch frequency projections, should enable the division to update and launch Atlas Es and Fs in a variety of Air Force and Army Research programs at a cost of about $1.5 million—more than a half-million dollars less than current cost.

"The refurbished and reliable Atlas missile can launch a 2,200-pound payload into polar orbit from Vandenberg," Johnston commented. "That's roughly $700 per payload pound in orbit. No one else can touch that figure!"

Such vehicles also can be used to launch a 6,000-pound payload on a 4,000-mile ballistic trajectory.

Johnston pointed out that the VAMP concept is not new.

Prior to start of missile modification at Kearny Mesa in 1966,

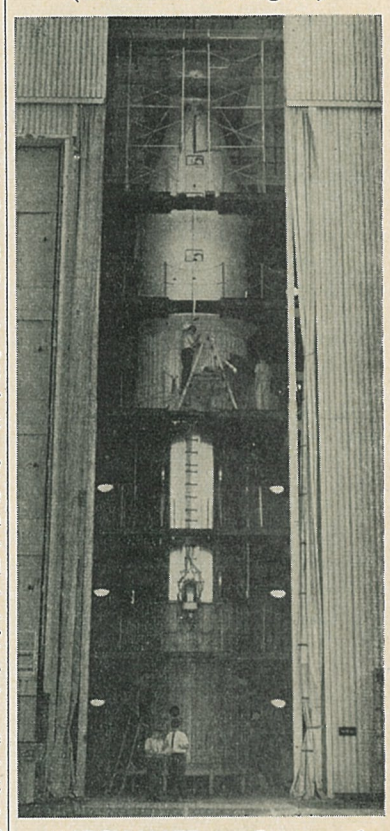
(Continued on Page 2)

Order Received For 2 Centaurs

Convair division has been awarded a $6,298,000 contract for production of two additional Centaur vehicles for use in launch of INTELSAT IV synchronous-orbit communications satellites.

Eight Atlas-Centaur boosters currently are scheduled for use in launch of the COMSAT-managed INTELSAT IV satellites for a worldwide consortium of nations. Five are to use Improved Cen-

(Continued on Page 2)



MATCH-MATE — Centaur for AC-25 and related adapters and fairings are mated at Kearny Mesa. Conferring at ground level are Gerry Christ, senior test conductor, and John Berry, DCAS assistant supervisor.

DC-10 'Quiet, Smokeless' During Maiden Flights

(Continued from Page 1)
carry from 270 to 330 passengers at speeds over 600 miles-per-hour. Four models are being marketed —the Series 10 for medium and transcontinental U.S. flights, the Series 20 and Series 30 for intercontinental routes, and the —30 CF convertible passenger/cargo version.

Fifteen airlines already have placed orders for the DC-10. They are Air Afrique, Air New Zealand, Alitalia, American, Continental, KLM-Royal Dutch, National, Northwest, Overseas National Airways, Sabena Belgian World, Scandinavian Airlines System, Swissair, Trans-International, Union de Transports Aeriens, and United.

Two of the three fuselage sections for the seventh DC-10 have been completed at Convair's Lindbergh Field plant and delivered to Douglas. Work is under way on fuselage sections for later deliveries this year.

Serving under Hurt as assistant program managers for the Convair DC-10 program are John S. Bergstrom and R. R. Hoover. A. L. Minella is Convair resident representative at Douglas.

STAR II LEASED TO HAWAII FIRM

STAR II, an 18-foot research submarine designed and built by the Electric Boat division, has been leased for one year to Makai Range Inc., a privately-operated oceanographic research company in Waimanalo, Hawaii. The submersible, which can dive to 1,200 feet, will be used for undersea survey work at the Makapuu Oceanics Range.

The five-ton, two-man sub was designed for observation and inspection primarily on the Continental Shelf. It has a submerged endurance of ten hours and is equipped with television cameras and lights, navigation and tracking systems, and a bow-mounted manipulator. The submersible has recently been based at the Corporation's San Diego aeromarine facility.

Bike Club to Cycle 50-m. to Oceanside

The CRA Bicycle Club will take a 50-mile ride to Oceanside beginning at 7:30 a.m., Saturday, Sept. 26.

Riders will meet at the Salk Institute. For information call ride leader Bill Stubblefield, ext. 1091 KM or (home) 279-0329.

Log Book Entries

Service Emblems
CONVAIR

Service emblems due between Sept. 1 and Sept. 15.

Thirty-year: Dept. 031, R. M. Cox, J. F. Kresser Jr., D. St. Anna; $45, A. J. Nicholas; 046, I. R. Endicott, Ira L. Quillan; 049, L. B. Reeder, F. A. Riddle; 140, W. E. Magnuson; 221, C. T. Ufen; 223, C. C. Maupin; 400, J. H. Allen, R. E. Barrett; 420, E. L. Johnson; 511, A. Valencia; 572, W. M. Sutherland; 761, P. W. Donaldson Jr., K. M. Stewart.

Twenty-five-year: Dept. 145, H. B. Riggs; 149, W. L. Koivisto; 400, J. Conta; 756, R. E. Millsap.

Twenty-year: Dept. 015, Sarah D. Willette; 031, E. G. Feddersen; 759, W. F. Prast Jr.; 115, W. J. Geudtner; 143, W. G. Bleecker; 194, J. R. Martinez; 198, L. J. Adams; 250, R. E. Haltmeier, M. A. Julio, R. G. Smith; 400, G. B. Branch, R. B. Chambers; 511, R. A. Close, G. H. Moen; 517, W. W. Baker Jr., J. H. Ladd; 553, A. Minniti; 563, P. D. Neiswender; 860, J. H. Harper, G. R. Ireland.

Fifteen-year: Dept. 031, F. L. Perkins; 046, B. R. Larman; 170, Velma P. Conrad; 142, R. M. Carison; 145, C. H. Lloyd; 193, J. G. Simmons; 195, C. R. Harter; 223, L. W. Jensen III; 226, Helen L. Lowe; 250, N. J. Booher Jr.; 420, C. E. Walker; 501, J. M. MacDonald; 507, E. K. Yager; 541, A. Biasini; 566, R. C. Savary; 574, J. W. Weaver; 578, P. L. Thornton; 756, H. T. Woods; 780, F. W. Cropper, A. T. Ramberg; 961, H. M. Brown Jr., 967, J. E. Franc, J. A. Hughes, C. R. Snelling; 985, G. R. Casteel, M. Moll; 989, C. P. Norwood.

Ten-year: Dept. 046, Nita Demopoulos; 101, Leona O. Brown; 105, J. W. Petre; 141, F. Mejia; 194, W. H. Myers; 205, G. H. Moore, S. J. Silva; 223, Ella J. Blevins; 250, M. S. McEachern, R. H. Wallace; 400, Mary B. Hershberger; 407, W. E. Ashman, M. C. Ladd; 452, S. Baron, E. C. Cotnam; 595, J. T. Gordon; 820, L. G. Johnston; 953, E. H. Peppard; 958, B. H. Peyton; 967, L. A. Del Casale.

ELECTRONICS

Fifteen-year: Dept. 422, J. Murray; 581, J. D. Cook; 614, L. B. Espinoza, D. F. Nichols; 616, Marion G. Williams.

Ten-year: Dept. 422, M. E. Smith; 566, R. J. Gallagher.

"Cost Reducers"
CONVAIR

Cost Reduction Achievement pins presented:

Five-credit pins—S. W. Zeiss, Dept. 780-4; T. P. Mellen, 810-0; J. A. Contasti, 046-0; C. L. Hibert, 566-2; T. J. Phillipp, 143-3; M. H. Thrasher, 001-0.

Personals
CONVAIR

The family of Dolores Frink acknowledges with grateful appreciation your kind expressions of sympathy.

* * *

The family of Paul S. Nill gratefully acknowledges your kind expression of sympathy.

Mrs. Evelyn Nill

Awards
CONVAIR

Employe Suggestion awards approved for week ending Aug. 28:

J. M. Abernathy, Dept. 400-6, $15; T. A. Bessey, 143-1, $11.45; A. Blachek, 400-1, $913.80; C. S. Boggs, 250-0, $15; I. C. Brugger, 146-3, $180.80; F. A. Fowler, 045-0, $7.50; F. D. Holbrook, 759-0, $47.20; C. M. Johnson, 780-1, $15; J. Kelly, 027-0, $21.70; J. T. Kucala, 045-0, $7.50; C. J. Lewis, 250-1, $51.50; E. A. Marvel, 020-0, $30 (two awards); J. J. Monty, 731-0, $71.75; R. R. Myers, 979-3, $20.80; H. E. Naish, 731-0, $71.75; W. W. Nobiensky, 001-0, $74.65; W. W. Nobiensky, 001-0, $7.50.

Also W. V. Peed, 143-5, $41; F. J. Serio, 027-0, $30; C. E. Shane, 979-1, $25; S. E. Smerdon, 059-2, $15; P. P. Standley, 734-0, $11.45; R. L. Stevens, 045-0, $15; B. J. Sullivan, 046-0, $14; M. H. Thrasher, 001-0, $82.15 (two awards); J. C. Trueblood, 002-0, $27.80; W. L. Tucker III, 015-0, $107.50; W. A. Wherry, 046-0, $16.10; N. C. Ybarra, 046-0, $14; H. A. Youngs, 020-0, $20.

Employe Suggestion awards approved for week ending Sept. 4:

E. D. Borden, Dept. 141-4, $25; J. J. Boyer, 045-0, $15; T. T. Bronikowski, 400-1, $15; W. J. Bullock, 113-0, $126.50; J. F. Catone, 141-4, $25; Roger H. Crowe, 046-0, $38.60; W. J. Gramse, 001-0, $25; H. A. Gregori, 142-1, $15; J. F. Herron, 027-0, $63; W. W. Lacy, 149-3, $15; M. M. Lopez, 045-0, $34.60 (two awards); W. C. Pahl, 049-0, $15; W. V. Peed, 143-5, $40.70; Robert Pelletier, 979-3, $23; J. W. Quijada, 142-1, $64.20; G. A. Rehkopf, 019-0, $290.50; B. T. Robinson, 001-0, $37.60; R. J. Spanley, 142-1, $55.30; J. R. Stearns, 046-0, $15; V. L. Thomas, 143-3, $71.50; K. R. Thompson, 015-0, $194.80; H. R. Van Hoose, 149-6, $15.

Retirements
CONVAIR

CZEKALA—Chester, Dept. 015-0. Seniority date July 11, 1949, retired Aug. 28.

DONAN—John H., Dept. 420-1. Seniority date June 10, 1968, retired Aug. 31.

EVANS—W. G., Dept. 800-0. Seniority date May 3, 1948, retired Aug. 31.

GOODHART—Merle M., Dept. 732-0. Seniority date April 22, 1940, retired Aug. 28.

GRUBER — Bernard W., Dept. 810-0. Seniority date Nov. 21, 1950, retired Aug. 31.

HAAS—George C., Dept. 027-0. Seniority date June 2, 1941, retired Aug. 28.

KLINE—Alex, Dept. 401-4. Seniority date Feb. 17, 1969, retired Aug. 31.

LEWIS—John H., Dept. 810-0. Seniority date Oct. 10, 1961, retired Aug. 31.

MAKIS—James, Dept. 149-7. Seniority date Jan. 9, 1947, retired Aug. 27.

MAGNUSON—C. Edwin, Dept. 533-1. Seniority date Nov. 16, 1955, retired Aug. 12.

MORAN—Clarence I., Dept. 985-4. Seniority date Oct. 15, 1957, retired Aug. 30.

MULRYAN—Lawrence G., Dept. 250-2. Seniority date Jan. 9, 1940, retired Aug. 31.

NAGY—Peter A., Dept. 533-1. Seniority date Oct. 15, 1942, retired Aug. 21.

ROUNDER—Arthur T., Dept. 001-0. Seniority date Feb. 11, 1965, retired Aug. 31.

SJOSTROM—Alvar, Dept. 250-3. Seniority date Aug. 7, 1941, retired Aug. 28.

WAITE—Bert N., Dept. 015-0. Seniority date Feb. 2, 1948, retired Aug. 31.

Deaths
CONVAIR

DEMING—John A., Dept. 810-0, died Aug. 30; survivors include his wife, Grace; a son, John; and a daughter, Mrs. Evelyn Hogan.

FRINK — Allen P., retired March 27, 1964, Dept. 573-1, died Aug. 31. Survived by his wife, Dolores.

GROSS — Alex H., Dept. 514-0, died July 31. Survivors include his wife, Mel; sons, Michael and Phillip; and mother, Mrs. Fannie Gross.

OGLESBY—Ralph R., retired Jan. 17, 1961, Dept. 192-3, died Aug. 31. Survived by his wife, Eunice.

WOHLER—Chester B., retired Nov. 4, 1960, Dept. 8-4, died May 27.

General Dynamics News

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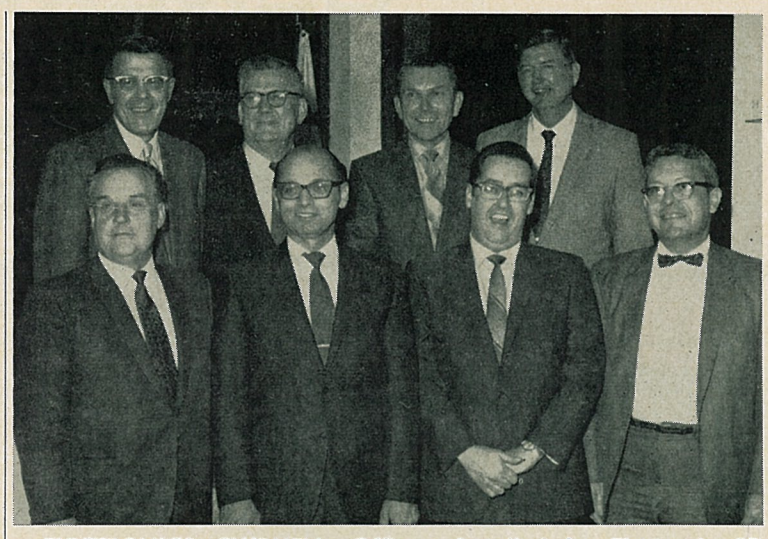
Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.



ELECTRONICS CLUBMEN—Officers installed by Electronics-SD Management Club for 1970-71, from left, are (back row) R. R. Christy, board member; P. H. Teeter, treasurer; F. L. Packard, president; J. L. Bigley, second vice president; (front row) C. B. Bagaloff, board member; V. M. Sardo, first vice president; G. W. Varney, board member, and L. F. Bell, secretary.

Con-Trib-Club Annual Member Drive Begins

The question "What can I do to become involved in my community and to help my fellow man?" can be answered during the Convair Employes' Con-Trib-Club annual membership campaign beginning Monday (Sept. 21).

A partial list of what contributions to Con-Trib-Club, through payroll deductions, have accomplished would include: an artificial kidney machine for use of a fellow employe, much needed therapy equipment for emotionally disturbed children, funds for the fight against heart disease and cancer, USO, camperships, and playground equipment for needy children.

Con-Trib provides the largest single donation in San Diego to the United Community Services (UCS) and its 69 non-profit social and health agencies.

Del Dimmitt, chief of safety and fire and the Con-Trib-Club campaign coordinator, said goals will be to sign up new members and increase "fair share" participation. A "fair share" is the equivalent of four minutes per day or 8/10 of 1 per cent of pay.

The "fair share" method enables each employe to contribute an equitable amount based on his earnings, permits automatic modification of the donation if earnings change, and eliminates the need for the individual to renew his membership each year.

Employes already contributing their "fair share" will receive a gold pin which they can wear to demonstrate their involvement and a brochure describing UCS activities.

Non-members and employes who are regular members but less than "fair share" givers will be contacted by their supervisors and presented Con-Trib-Club authorization cards and UCS brochures.

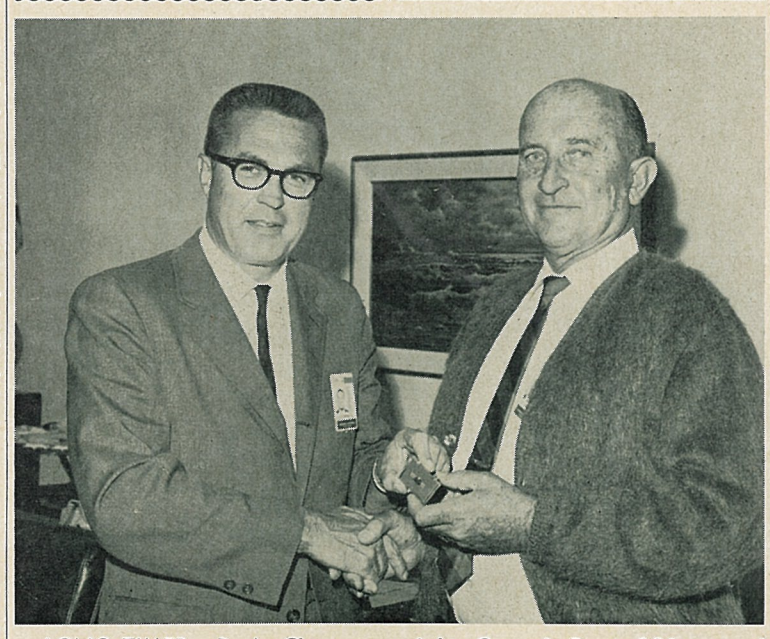
Dimmitt stressed that by giving to Con-Trib-Club you "give one time for all."

Later, each Con-Trib-Club member will receive a decal for his home. This will indicate to all campaign solicitors that you are already contributing.

Con-Trib-Club funds are administered by a 12-member employe committee, appointed jointly by management and employe-representative labor organizations.

When telephoning, never mind the weather. Get to the point. Telephone time costs money.

CON-TRIB GIFT—Pat O'Leary Jr., 13-year-old cystic fibrosis victim and son of P. J. O'Leary of Convair's Dept. 952-0, uses body plethysomograph donated by Convair Employes' Con-Trib-Club through Cystic Fibrosis Research Foundation for University Hospital's pediatric pulmonary lab. Alfred Jalowayski, lab chief, operates related recording unit.



LONG TIMER—B. A. Clemmens, right, Convair Dept. 031 second shift foreman, recently received 35-year pin from L. C. Josephs, Convair vice president and general manager. Clemmens, who works in structures test facility on F-111 support program, joined Consolidated Aircraft at San Diego in 1935.

Order Received For 2 Centaurs

(Continued from Page 1)
taur D-1A second-stage vehicles.

The two Centaurs for which the recent contract was negotiated will be used in the Atlas-Centaur 28 and Atlas-Centaur 29 missions.

Atlas-Centaur 25, first of the INTELSAT IV boosters, is tentatively scheduled for launch Dec. 2 from Complex 36A at the Eastern Test Range.

The Centaur second-stage for AC-25 last week was undergoing mechanical match-mate and electrical checkout with its interstage adapter, stub adapter, split barrel, split fairing, and nose fairing in the Combined Systems Test Stand tower at Kearny Mesa.

Squib simulators were fired to test the pyrotechnic separation system for use in jettisoning of fairing sections.

Gerry Christ, senior test conductor, said the match-mate "stack-up" was the first to incorporate a 25-inch stub adapter for support of payload and nose fairing weight.

The booster for AC-25, Atlas SLV-3C No. 5005, was shipped to Cape Kennedy from the Kearny Mesa plant Oct. 18.

Gerry Lucas is in charge of AC-25 "hardware" and R. J. Moberly for mission management for the Centaur program office.

The fourth-generation INTELSAT IV satellites, built by Hughes Aircraft Co., will weigh 3,080 pounds—compared with 150, 357, and 647 for the earlier-generation INTELSATs.

INTELSAT IV satellites will be 17.6 feet high and 93.5 inches in diameter and will carry an apogee motor for use in precision orbit circularization.

Designed to operate for seven years, they will be capable of providing 12 TV channels or up to 9,000 telephone circuits.

Firing of Atlas booster and sustainer engines and first burn of the Centaur engines in the AC-25 mission will place the Centaur and INTELSAT in a parking orbit.

Following a 15-minute in-space coast, second burn of the Centaur engines will change the plane and place the satellite in a transfer orbit.

After Centaur separation and retromaneuver, the INTELSAT will be spin-stabilized during a 5¼-hour coast to orbital apogee. The satellite's antennas will be "despun," however, through a bearing and power-transfer assembly, to insure they remain properly positioned.

COMSAT personnel are to control firing of the INTELSAT motor for synchronous-orbit positioning over the earth.

Atlas Work Shifts to VAFB

(Continued from Page 1)
Atlas D-series missiles were modified at Vandenberg AFB and Norton AFB by Convair and Air Force personnel in the "Chalk Talk" program.

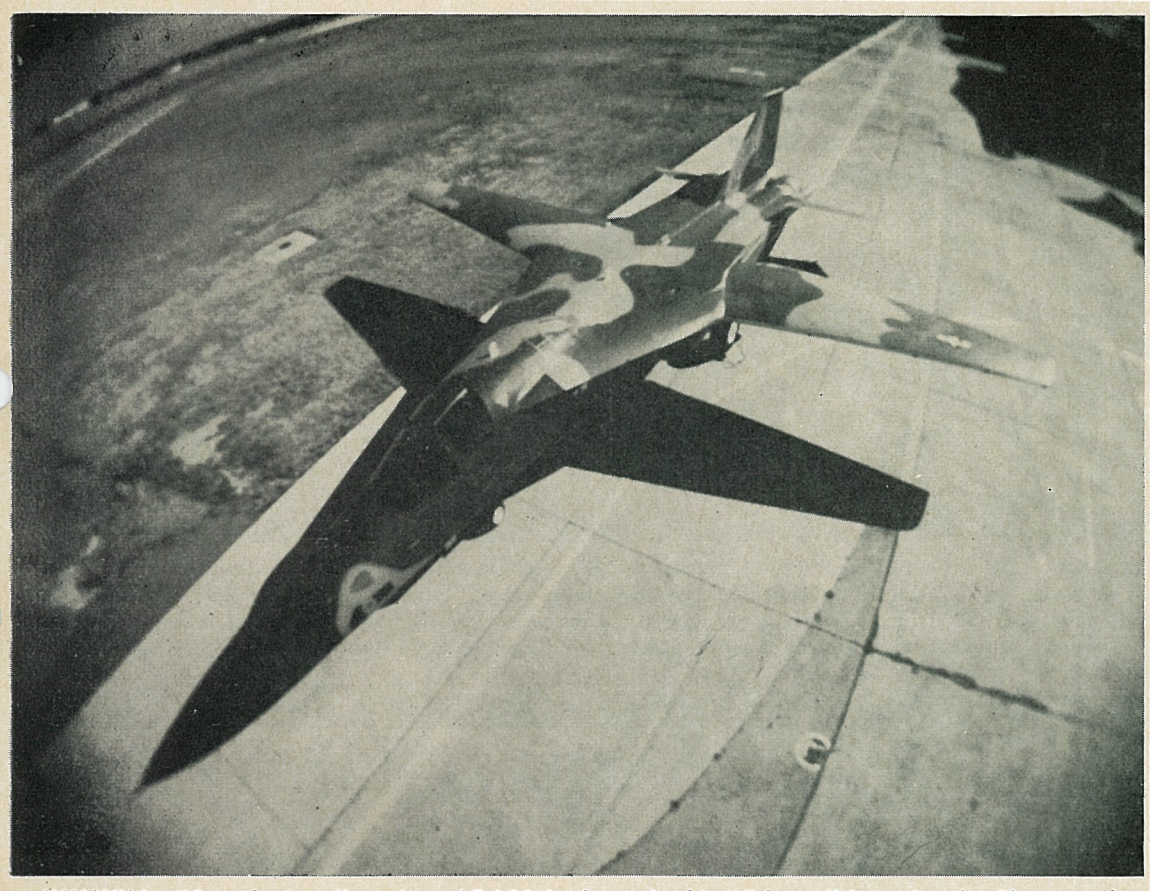
"The old Ds had spent years at SAC launch sites across the country and — in spite of their seeming engineering design obsolescence—26 out of 27 were successfully flown," Johnston said.

Convair last month had 155 employes, including support personnel, at Vandenberg.

Modification of the Atlas Es and Fs in the MAB-2 building there will be under the overall direction of Roger Lynch, Convair VAFB operations manager; Jim Copeland, chief engineer; and Denny Barber and Dick Smith, both launch conductors.

Johnston said almost all the launch services employes at Vandenberg are highly skilled and have more than 10 years service with the division on modification and launch of Atlas missiles and space launch vehicles.

In addition, the division has a well-equipped machine shop and related manufacturing, handling, and inspection facilities at Vandenberg.



ILLUSION—"Stretched out" version of F-111 is shown in this "fish-eye" lens view by Photographer Don Phillips at Fort Worth division. Shadow makes F-111 nose appear even longer than it is.

Goldwater Cites Need For F-111 Production

The F-111 gives U.S. tactical forces the unique ability to strike at night and in bad weather; it is in the nation's vital interest to keep this production capability in being.

Senator Barry Goldwater cited these "distinct advantages" of the aircraft in a recent discussion of military appropriations for fiscal '71.

"The F-111 has the capability to strike enemy airfields at night and in bad weather," Goldwater said, "but the enemy would be restricted to striking our airfields during that fraction of the time when visual attacks can be made (for example, 37 per cent of the time in East Germany).

"The low radar visibility of this airplane traveling at high speeds at 200 feet makes it almost impossible for it to be picked up by enemy radar."

He said the low-level flights are made possible by the relatively new terrain-following radar system, which "to our knowledge . . . has never failed."

"The F-111 can fly far enough to strike virtually all the targets in the European theater," Goldwater said. "This advantage can be used either to strike airfields well beyond the ground battle or to base the F-111 beyond the effective range of enemy tactical aircraft.

"By being able to strike at will at the enemy air forces we can control the air battle. The F-111 is the key to providing this capability for our future tactical Air Forces.

"I might say, also, that it will make a fine carry-on bomber for the period of time when the B-52 is beginning to show signs of giving out and the time when we will receive the B-1 into our total inventory."

In reporting on the cold proof-testing program, Goldwater said: "It is very encouraging to realize that not a single evidence of a forging defect has been found in the number of aircraft tested."

Goldwater said many systems improvements are made on F-111s when they enter the proof-testing program. "I think the airplane is much better off for having had the decision made to test it," he said.

Speaking as a pilot (Goldwater is an Air Force reserve general), he praised the F-111's handling characteristics and flight-envelope capabilities.

"I believe that . . . we are going to find the country accepting this airplane . . . I have yet to find a pilot in the Air Force who does not enjoy flying this airplane," he said.

Goldwater defended the F-111's safety record and its "public image."

"Not facetiously," he said, "I suggested to the chief of the Air Force some time ago that if they changed the identification of the aircraft, the public would forget the troubles it has had.

"But the truth is that this airplane . . . has had as good an accident rate—in fact, for a long while it was running better—than any other jet fighter or jet bomber, and it still maintains an accident record that is equal to that of any other aircraft in the field.

"The 111 production line is producing a great number of modern weapons systems. It is in the nation's vital interest to keep this production capability in being."

Tank and Pylon Drops From F-111 Speeded up

Accelerated weapon, tank and pylon drops from F-111 aircraft continued in both Category I and II tests at Eglin AFB, Fla. last month.

"We recently completed our first pylon drops from FB-111 No. 2 to check separation characteristics," said C. C. Widaman, base manager. "Results were quite good."

(A total of eight pylons can be attached under F-111 wings to carry bombs and tanks. The pylons can be jettisoned after they've served their purpose.)

No. 2 bomber is also being used to drop dummy nuclear weapons and 600-gallon fuel tanks over both land and water targets at Eglin.

F-111E No. 2, previously used in conventional weapon drops, will make drops from both the internal bomb bay and external points following completion of cold proof-testing in Waco.

Category II testing by the Air Force continued on F-111A No. 26 (weapons and tank drops), and F-111A No. 24 (radar evaluation). F-111E No. 4 will re-enter Category II testing after it is proof-tested at Waco.

"Overall," Widaman said, "the program is moving along smoothly. We're happy with results."

COMING DOWN—F-111 testing at Eglin AFB, Fla., came to momentary halt last month as small twister formed directly over General Dynamics hangar, then finally struck ground briefly about a mile away. GD Photo Specialist Al Sipes came up with these dramatic photos. No damage was reported.

New Computer Display Slated For ASW Tests

A wall-size computer display will be installed by General Dynamics for evaluation in one of the U.S. Navy's newest antisubmarine warfare (ASW) systems.

The display, which uses a new Charactron shaped beam tube that is 100 times brighter than previous models, will enable a group of controllers to view ultrahigh-resolution tactical data at computer speeds.

The system, designated the 2220, will go into operation later this year at the ASW Aircraft Tactical Support Center being developed by the Weapons Systems Test Division of the Naval Air Test Center, Patuxent River, Md.

The projected display, operating on-line with a computer, will be part of the advanced control center complex started in 1968 with the assistance of General Dynamics display personnel.

The center will operate in support of P-3C antisubmarine aircraft which use avionics equipment developed under Navy A-NEW contracts. General Dynamics is prime contractor for tactical display sets for the aircraft.

Information from P-3C aircraft can be fed to the control center where personnel will provide further analysis. The center also will be used for briefing and debriefing.

The Patuxent, Md., center is a prototype system that will be used for future operational control centers. Besides the large screen displays, the center will operate direct view displays and other informational systems.

E. J. Illes, manager of marketing at General Dynamics' Electronics division in San Diego, which will install the large screen system, said that the direct projection of high fidelity graphic and alphanumerical data is possible because of greater electron gun efficiency in the new Charactron tube.

This efficiency, he said, is achieved by removing the electron beam controlling elements from their normal internal location and mounting them external to the tube. A higher percentage of the emitted electron beam thereby reaches the Charactron matrix, which, in effect, stencils the beam into the desired shape or alphanumerical figure for display. The result is a 100 times brighter image on the viewing screen.

This large screen display system is the first of various applications for new General Dynamics displays. Others include ground-based, shipboard and airborne computer display systems.

EXCHANGE—Barry J. Shillito, right, Assistant Secretary of Defense (installations and logistics), and J. T. Cosby, vice president-111 programs, confer in Dallas during recent convention of Society for Logistics Engineers.

Asst. Secy. of Defense Sees Money Problems For 70s

Cutting costs while maintaining a highly effective defense posture is the difficult problem facing the Department of Defense in the 70s.

So said Barry J. Shillito, Assistant Secretary of Defense (installations and logistics), at the fifth annual convention of the Society of Logistics Engineers in Dallas recently.

"The technology explosion will continue," Shillito said, "and systems in the 70s will be more complex and costly. Thus we must do all within our power to make systems as economical as possible."

Shillito said his department would pay even closer attention to life-span and maintenance costs of systems in the future. He suggested that logisticians play an even bigger role at the design level.

The assistant secretary said the defense budget, which will have the least per cent of growth of any segment of the federal budget, is being subjected to the "severest kind of controls."

Cuts in defense spending will continue to affect many people in defense and related industries, he said.

Shillito laid down several goals for the 70s, including: more disciplined approach, cost-consciousness at every level, and improved planning of maintenance.

Annual Reunion Set By Vultee Veterans

Vultee Club, an organization that includes many General Dynamics employes who were employed by the former Vultee Aircraft and Consolidated - Vultee firms, will hold its 23rd annual reunion at 7:30 p.m. Oct. 3 at Los Amigos Country Club in Downey, Calif.

Parts of the private plane in which Jerry Vultee and his wife, Sylvia, were killed in a crash in a snowstorm in the Coconino National Forest in Arizona, in 1938 will be on display. Vultair magazines and historical photos and motion pictures also will be shown.

Cost for the stag-only dinner and meeting is $6. Reservations may be made through Vultee Club, P.O. Box 245, Downey, Calif. 90241.

Consolidated-Vultee was a predecessor firm to today's Convair and Fort Worth divisions.

CARDLESS OPERATION—Convair keypunch operators write on a magnetic disk with new Keyprocessing System equipment instead of punching holes in cards. In left photo, leadlady Phyllis Scott, left, looks over status report with Ken Kerr, group supervisor, and George Jacob, chief of data processing operations, as leadladies Jane Chance, seated, and Crystal Richards discuss operation of control console housing computer and tape drive. Magnetic disk unit is in right foreground. Trim lines of keystations are shown in center photo. Keyboard location and spacious keystation work surface is shown in right photo. Operator is Flo Brill.

Graphic Displays Give 'New Look' To DC-10 Production Areas

DC-10 production areas at Convair are being "spruced up" with new displays to acquaint employes and visitors alike with supervision, airlines that have ordered the DC-10, details of work operations, and status of panels and sections in production.

Even the trash cans in DC-10 production areas at Lindbergh Field have been given a patriotic red, white, and blue look in what —to date—has developed into a nine-part graphic arts project to help give factory work areas an appearance befitting the craftsmanship in work being accomplished.

"Everything's looking better," Jack Hurt, DC-10 program manager, commented. "It's made quite a difference already in improving communication and understanding of our production operations."

Included in the nine-part program has been development and installation of:

1. "DC-10 Country" and "Convair Craftsmen Work Here" signs and decals of airlines to fly the DC-10 for Bldg. 2 and 3 at Lindbergh Field and adjacent to the stretch press in Bldg. 5 at Kearny Mesa.
2. Individual item status signs.
3. Ship/section status panels with schedule dates and airline identification for each.
4. Framed crew - load - chart panels.
5. Group foreman information panels with a large color photo of the group foreman, photos of each item supervisor, information and drawings on work being accomplished, and space for posting of individual-interest items and charts.
6. Large displays, one in Bldg. 2 and one in Bldg. 3 at LF, to give an overview of the DC-10 fuselage program.
7. Painting of refuse cans and installing screens in some for recovery of rivets and other small parts from floor sweepings.
8. Desk panels for general foremen's desks for use in charting tasks and employe status.
9. Work detail sheets consisting of flip-chart drawings to show each operation.

The graphic displays have been designed and produced under the direction of Len Parker and George Paul, both Dept. 517-0 senior graphic designers. Among those assisting in planning, production, and installation have been John DeBlanc, Lou Minor, Herschel Jackson, Brent Josephson, Joe Dragonetti, and Dick Missman.

DC-10 PROFILE — Joan Melton, Dept. 046-0 assembler, looks over one of new graphic displays that help familiarize employes and visitors with production supervisors and operations in Convair's "DC-10 Country."

Small Boat Course Scheduled Sept. 22

Mission Bay Power Squadron will conduct a 13-week small boat handling course for General Dynamics families and friends from 7 to 9:30 o'clock Tuesdays beginning Sept. 22 in the CRA Clubhouse.

The course will cover boating safety, seamanship, elementary navigation, and "rules of the road." Books and supplies will be available for purchase at first class meeting. Certificates will be awarded to those successfully completing the course and making a passing grade on a final examination.

Phone Richard Bailey, ext. 1083 KM, for additional information.

Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, Sept. 19. Hours are **from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. No canvas or open-toed shoes and no bare feet.**

Convair Inspection Capabilities Improved With New Machines

Inspection capabilities at Convair have been enhanced with addition of a Cordax measuring machine, Branson digital caliper, and Surfanalyzer machine in the LF machined parts inspection areas.

According to M. E. Thomas, machined parts inspection supervisor, the numerical readout Cordax machine produces complete dimensional information in a matter of minutes as compared to hours or days needed for hand measurement methods. He described the readout system as being capable of 100 microinches resolution, in X-Y-Z axis, on parts as large at 20 x 24 x 8 inches.

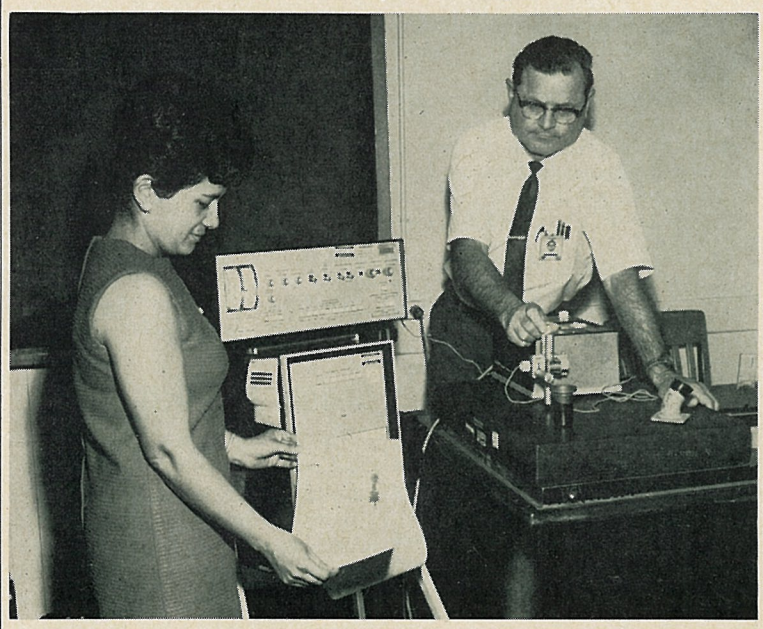
When used in conjunction with the recently Convair-patented magneball table, the Cordax system is able to produce data for the inspection department that before was impossible to obtain.

The portable Branson digital caliper, Thomas said, provides a one side thickness measurement and its probe is sensitive to tolerances of 100 microinches difference in thickness.

Through the digital readout system, inspection of parts can be accomplished while still on the milling machine, allowing adjustments to be made before removal. Thomas explained that the Branson digital caliper has been successful in reducing rework time to the minimum on C5 skins as well as other Convair projects.

All surface type conditions such as waviness, roughness, profile, and roughness height can now be measured to a one micron deviation accuracy with the new Surfanalyzer machine, Thomas noted.

Other departments such as engineering, tooling and the wind tunnel, Thomas said, are beginning to utilize the more sophisticated equipment and rapidly advancing technology resulting in strengthening the division's production capabilities.



INSPECTION EQUIPMENT—M. E. "Tommy" Thomas, Convair inspection supervisor, is shown operating Surfanalyzer, one of several new pieces of inspection equipment located at LF plant. Julie Umland, group secretary, is monitoring graphical output of system.

Keypunch Operators Replace Cards With Writing on Magnetic Disks

Convair division's data processing operations department has replaced 34 of its slow and noisy card punch machines with newer, faster, and almost noiseless CMC Keyprocessing System keystations for direct electronic writing onto a magnetic disk through a smaller computer.

Data from the disk is transferred directly to magnetic tape reels for data processing and printout—eliminating the cost of card punching, card stock, storage, and inventory requirements.

Ken Kerr, group supervisor for keypunch operations, Dept. 101-6, said plans are to secure 40 keystations and two control units. Up to 32 keystations can be operated through one control unit if a problem should occur in the other.

Twenty-one of the old card punch and verifier machines have been retained for use in running "card bound" tasks. The number eventually may be reduced to 15.

Two groups of keypunch operators have completed 12-hour training courses and have been using the new Keyprocessing System equipment in a temporary location in Bldg. 4 at Kearny Mesa.

Meanwhile, keypunch operations' regular work area has been undergoing modifications with below-floor-level channels being created for cables to connect the new equipment and with a separate area being enclosed to reduce noise level and separate the card punch machines from the new keystations.

Each of the virtually silent keystations has a keyboard built into a spacious work surface, an entry point for a "record format" for the job being processed, and 16 displays that can light in the operator's line-of-sight. All controls are located on the keyboard. An alarm sounds if an error such as an invalid batch number or an incorrect account number is entered.

The control console setup includes a high-speed digital mini-computer that performs basic system functions at more than 500,000 operations per second, a magnetic storage disk, a magnetic tape drive unit, and a teleprinter.

"With the card punch machines, the operator is faster than the machine," Kerr said. "With the new system, the machine is always waiting for the operator. Therefore, the operator need never break rhythm to wait for the machine."

Data originating from the keystations and processed through the mini-computer is stored on the disk in a location unique to the entering keystation. The disk can store up to 7.25 million characters of data. When keying and verifying has been completed, batches of material may be transferred automatically from the disk to the tape.

The teleprinter is used by department leadladies to obtain a running account of tasks being completed or current status of each unit in the system.

Each keystation operator can read, write, or verify information on the magnetic disk. Writing and verification of the same job can be performed almost simultaneously—with the verify operator working a few seconds behind data input.

During verification, if a variance from the original occurs a "miscompare indicator" lights, the keyboard locks, and the letter or figure of variance is displayed. Corrections are fed in by depressing a reset key and rekeying over erroneous data.

Mrs. Marion K. Armstrong, a keypunch operator for 25 years and 10 years with Convair, said each new generation of machine improves operations and output. She especially likes the quietness and versatility of the keyboard of the new system. (Her husband, M. T. Armstrong, is a Dept. 046 assembler at Lindbergh Field.)

Phyllis Scott, a leadlady, said the keypunch operators are "progressing nicely" and building up speed in operating the new system.

"The girls really enjoy this machine," she said. "The control panel is a big help for us (leadladies), too. We can determine the 'batch' status at any time by coding in various letters on the console."

Expansion Set At Rochester

Stromberg-Carlson has announced planned expansion of the company's manufacturing, sales and warehouse facilities at Rochester, N.Y. beginning this month.

Dause L. Bibby, president, said the northeast sales branch will move into a building now under construction on Musroom Boulevard in Henrietta. The building will provide 15,000 square feet of office and warehouse space for the branch.

Also in September, Stromberg-Carlson will begin a partial occupancy of a General Dynamics-owned facility near Orlando, Fla. The Dynatronics operation, presently occupying this facility, is able to release this needed space and will continue operation in the Orlando area.

Stromberg-Carlson also plans a $500,000 capital expansion of the printed wiring board fabrication facility at its Carlson Road plant. This will bring to $2.0 million the total expenditure for Rochester production support of the CROSSREED system program.

The expansion plans follow the recent completion of a 39,000 square-foot addition to the Rochester plant. The building houses the company's technical training center, new integrated circuit production facility and some engineering designed operations.

The new manufacturing space, Bibby noted, is being added to meet increased customer requirements for telecommunication systems. Stromberg - Carlson is a leading manufacturer of telephone systems for independent telephone companies, industry and private communications users.

Automatic Control System Adds To Proof-Testing Safety Margin

An automatic control system is adding to the safety margin in F-111 proof-testing and at the same time trimming test time.

In the tests, negative loads of 2.4 g's and positive loads of 7.33 g's are applied to the F-111 wing and fuselage through 17 hydraulic jacks.

Previously, engineers made load adjustments more or less manually. In the new system, a programmed tape feeds "commands" through a sophisticated computer system and monitors the operation every 1/10th of a second.

Loads are applied in steps of 20, 40, 60, 80 and 100 per cent.

"If the load is not within two per cent of specification—sometimes less—during any step, the computer commands the data system to make a correction," said Weldon Walker, group engineer in the Fort Worth structures lab.

"For example," Walker said, "there are six jacks under each wing. Extreme care must be taken to make sure the right combination of shear force, torsion and bending moment are exerted throughout the test.

"The system is constantly checking to make sure the loads are within very close tolerances at all times. Such a system drastically reduces the chance of human error in applying loads to the airplane."

Ten College Students Complete Summer Spent With DCAS

Ten college students who have been employed in clerical positions by the Defense Contract Administration Services District (DCASD-SD) and Defense Contract Administration Services Office (DCASO) at Convair this summer were commended for their service, taken on a tour of the Kearny Mesa plant, and treated to lunch at the Open Range by their supervisors Aug. 25.

The 10 will be studying this fall at University of California campuses at Berkeley and San Diego, Santa Clara College, San Diego State College, and the San Diego Community Colleges.

Five, however, will continue in the federal SIS (Stay in School) program that will permit them to continue work in the DCAS offices up to 16 hours a week during the school year.

The government-sponsored full-time summer employment program provides financial assistance for selected students and augments the regular work force while permanent employes are on leave.

Col. C. F. Merz, DCASD-SD commander, and Lt. Col. J. B. Garrison, DCASO chief, commended the students for service at the luncheon.

Earlier the group had "seen what some of their paperwork leads to" on the Kearny Mesa tour of computer, electronics manufacturing, and launch vehicle assembly areas—including a briefing on the Atlas-Centaur 23 and 24 launch vehicles that will launch the Mariner-Mars probes next year.

They also saw the award-winning General Dynamics film "The Company They Keep."

"Each year the college students assigned seem to be sharper and quicker to grasp the complexity of government directives and operations," Col. Garrison said. "By virtue of their fresh and unhampered outlook, they often teach the regular employes a few things."

STUDENT HONORS—College students employed by DCAS offices this summer are pictured with Col. C. F. Merz, right, DCASD-SD commander, and Lt. Col. J. B. Garrison, DCASO chief, after recent luncheon in their honor. From left, they are Betty Terrell, Martha Santoyo, Karen Fairchild, Nancy Ferris, Karen Nicholson, Marjorie Brooks, Elsie Tamayo, Rosario Rios, Shelia Turner, and Wayne Takasugi.

DC-10 Contract Is Amended To Include Value Engineering

(Continued from Page 1)

mented Value Engineering Change Proposals (VECPs).

"This provides even more incentive for us at Convair to help Douglas reduce the cost of the DC-10 and assure its profitability both for Douglas and Convair," Jack Hurt, Convair DC-10 program manager, said.

Frank S. Chambers, manager of DC-10 contracts, said the value engineering agreement covers cost reduction proposals initiated and developed by Convair for changing of drawings, designs, specifications, and other requirements covered by the contract that require Douglas approval for implementation.

"We believe this will provide substantial benefit for both companies," Chambers commented. "It should have long-term potential for implementing cost-saving proposals."

H. P. "Howie" Williams, chief of value engineering, said the division already has submitted seven VECPs, representing substantial potential savings, that will be considered by Douglas under provisions of the new VE agreement.

"This is just a beginning," he said. "Now that we are completing design work for the DC-10, we are entering a period when we can really look for improvements that can reduce production costs."

SEQUOIA SCENE—CRA Trailbike Club members and Pomona division guests made a 36-mile ride over Sequoia National Forest trails to Monache Meadows last month. From left are Judy and Toby de los Cobos of Pomona, Gene Langworthy of Electronics-SD, Danny Beard, Lamont and Linda Langworthy, Bob Browning, and David de los Cobos.

'Lost, Found' Holds Variety of Items

In the dark? Can't see? Your problem might be solved by visiting "lost and found" and claiming your lost prescription glasses.

Convair's "lost and found" boxes, over the past year, have collected over 30 pair of such glasses, as well as many other miscellaneous items.

To claim lost items, stop by "lost and found" at the following locations: LF plant, employment office, Bldg. 16; AF Plant 19, Bldg. 4, near first aid station; KM plant, employe benefits office, Bldg. 8.

Sq. Dance Club Sponsors Class

CRA's Dynamic Eights Square Dance Club will sponsor a 20-week course for beginners from 8 to 10 p.m. Tuesdays beginning next week (Sept. 22) in the CRA Clubhouse.

Clark Elliott will be instructor and cost will be 50 cents per person. New enrollments will be accepted through the Oct. 6 session.

"Square dancing has come a long way since 'Turkey in the Straw' days but it still retains the Saturday night social atmosphere of getting together with friends in a fun-type group activity," a Dynamic Eights representative said.

"Those who have never tried square dancing can get into the 'swing of things' by joining the beginners' class."

Dynamic Eights has scheduled its annual family picnic Sept. 27, beginning at 10 a.m., in Missile Park. Games will be scheduled for the kids and square dancing for members.

Electronics Club Will Meet Tonight

Electronics-SD Management Club will meet tonight (Sept. 16) at the Sands Hotel with guest speaker Ralph S. Colonell, San Diego postmaster, discussing the San Diego postal service.

Tickets, at $3.85 for members and guests, are still available from club boosters or may be purchased at the door.

Social hour is set for 5:30 with an "all you can eat" roast beef, seafood newburg and spaghetti dinner at 6:15.

Ice Follies Tickets Available From Club

CRA Ice Skating Club has 100 choice seat tickets for the final Ice Follies performance at 6 p.m. Oct. 4 in the San Diego International Sports Arena. Cost is $4 (a $1 saving). Phone Bud Davies, commissioner, ext. 2844 KM.

W. R. SMITH TAKES SCOUT LEADERS' COURSE

William R. Smith, a logistics analyst in Convair's 956-0, recently attended a leadership training conference for Boy Scout adult leaders at Philmont Scout Ranch in Cimarron, N.M.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 KM. Deadline for next issue of GD/NEWS is Sept. 22. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

ADVENTURERS—Meet 7:30 p.m. tonight (Sept. 16).

BADMINTON—Play 7-10 p.m., Mondays, Federal Bldg., Balboa Park.

BICYCLE CLUB — Oceanside 50-mile ride, 7:30 a.m., Sept. 26.

BRIDGE — Duplicate bridge sessions, 7:30 p.m., each Friday.

CAMERA CLUB — Meet 7:30 p.m., Sept. 20, Photo Arts Bldg., Balboa Park.

CERAMICS—Meet 9 a.m.-noon and 7-10 p.m., Tuesdays and Thursdays.

CHESS—Play 7 p.m., Sept. 23.

CHORUS—Rehearsals 7:30 p.m., Mondays.

COUNTRY & WESTERN MUSIC — Meet 7:30 p.m., Thursdays, CRA Missile Park picnic shelter.

FENCING—Workouts and instruction 7:30-10:30 p.m., Fridays, YWCA, 10th & C Sts.

GOLF — The Meadows tourney, Sept. 19-20, 7 a.m. tee-off.

GUN CLUB—Fun shoot, 9 a.m., Sept. 27, Gillespie Field gun range.

HEALTH CLUB—Open 9:30 a.m.-10 p.m., Monday through Thursday; 9:30 a.m.-9 p.m., Fridays; 10 a.m.-5 p.m., Saturdays; "women only" weekdays, 9:30-11 a.m.

ICE SKATING — Annual Big Bear weekend, Sept. 18-20. GD family skate night 6:15-7:45 p.m. each Thursday, House of Ice, Interstate 8 and Lake Murray Blvd. Flate rate fee $1 (includes skates).

JUNIOR SCIENCE — Meeting 7:30 p.m., Sept. 18.

MINIATURE RAILROAD — Operating sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions 7 p.m., each Wednesday, CRA Missile Park.

ORGAN CLUB—Meet 7 p.m., Sept. 22, Southland Music Co., 3459 Imperial Ave., Lemon Grove.

PISTOL CLUB—Shoot 9:15 a.m., Sept. 27, San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB — Meeting 7:30 p.m., Sept. 17.

RIFLE CLUB—Senior shoot 7 p.m., Sept. 23. Junior shoot 9 a.m., Sept. 19. Gillespie Field Range.

ROADRUNNERS—Meeting 7:30 p.m., Sept. 24, Gillespie Field Clubhouse.

SAILING—Meeting 7:30 p.m., Sept. 23.

SCULPTURE—Workshop sessions 7:30-10:30 p.m., each Monday.

SQUARE DANCE—Dance 8-10 p.m., each Thursday.

STAMP CLUB — Meeting 7:30 p.m., Sept. 24.

SWIMMING—GD family swim night 7-9 p.m., Sept. 19, Mission Beach Plunge. Tickets at employe benefits, 5 cents.

TABLE TENNIS—Friday night league 7:30 p.m. Play Saturdays, 10 a.m.-4 p.m.

TOASTMASTERS — Convair toastmasters meet 4:30 p.m., each Wednesday. Dynamic toastmasters meet 5:30 p.m. Thursdays. Speechcraft courses scheduled to start Sept. 15, call Harvey Seibert, ext. 2161 KM for details.

TROPICAL FISH—Meeting and workshop 7:30 p.m., Sept. 21.

Adventurers to See 'Dream Seekers' Film

A pilot film of a proposed new TV series "The Dream Seekers" will be shown at the CRA Adventurers Club meeting at 7:30 p.m. tonight (Sept. 16) in the CRA Clubhouse.

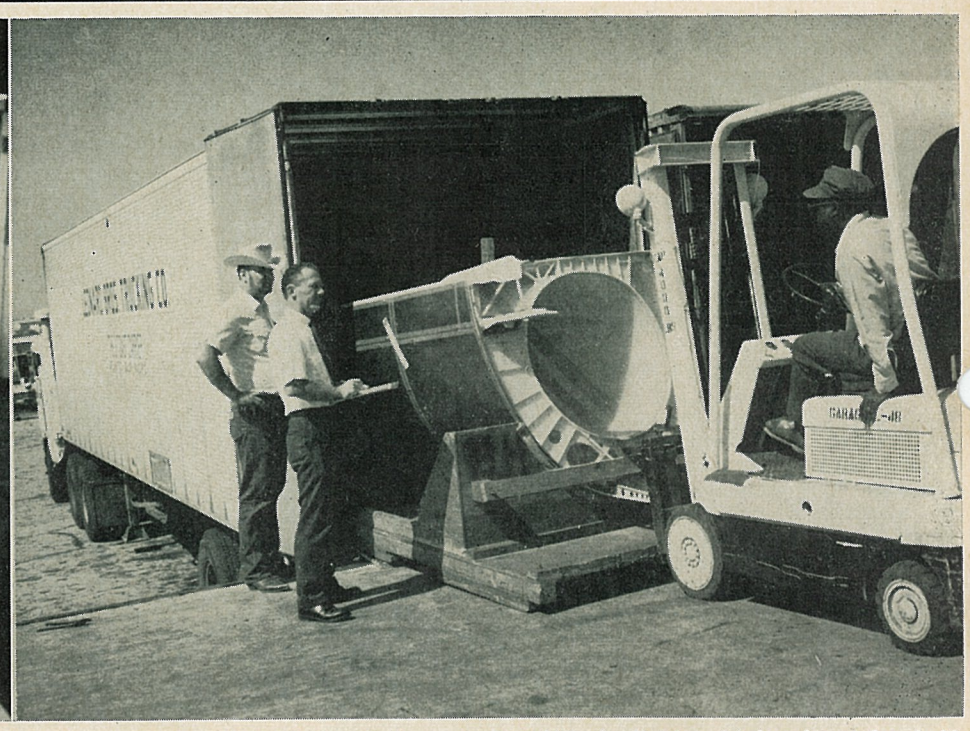
All GD employes and their families are invited to attend the San Diego premiere depicting the camping experiences of a family collecting Indian artifacts and precious metals in Arizona.

Kropp's Score Tops In Pistol Contest

Charley Kropp outfired Leon Thomas, 280 points to 273, for top expert class honors in CRA Pistol Club .22 calibre police course competition Aug. 23. Winners in the sharpshooter class were James Thomas, 216, and Ferd Carranza, 214.

Top positions in center-fire short national competition were Ernie Kampman, 255, first, and Kropp, 252, second.

CAMPFIRE SAILORS—CRA Sailing Club had 22 Campfire Girls and three advisers as guests for a day of sailing last month. Part of group is shown here aboard club's Ensign with Chuck Fischer at helm. Club also sails a Columbia 21 and nine Victorys.



F-111 MILESTONE—Discussing delivery of 1½-million pounds of F-111 flight hardware and looking over I-78 spike assembly, in left photo, are W. S. Stroud, program manager; Harry Rote, superintendent for F-111 assemblies; and Herschel Jackson, Dept. 228-5 production control foreman. Aft-center fuselage side assembly is loaded aboard truck for delivery to Fort Worth division (right photo) by J. H. Jordan, Dept. 250-5 forklift operator, as Donald Young of Grand Prairie, Tex., left, the truck driver, and R. A. Gilstrap, Dept. 226-1 traffic representative, check manifest.

First of New Type Buoys On Duty Off Sandy Hook

The first of seven new Mark II aid-to-navigation buoys designed and being equipped by Convair division for the U.S. Coast Guard was placed in operation Sept. 2 off Sandy Hook, N.J., at the entrance to New York harbor.

Designated 2 Alpha, it replaces the prototype 2 Alpha Convair buoy which replaced the Scotland lightship and has been operating successfully for three years.

The new 2 Alpha was dedicated Aug. 31 in a double ceremony at the U.S. Coast Guard Station at Cape May, N.J., that also marked decommissioning of a lightship built in 1923 that had served at the 5 fathom location off the New Jersey coast.

Both the hull of the new Convair 2 Alpha buoy and the 47-year-old lightship were constructed by the Bath Iron Works in Bath, Maine.

Among officials participating in the Cape May ceremonies were Adm. Robert Hammond, chief of the office of operations at Coast Guard headquarters in Washington; Capt. Bernard Henry, commandant of the Coast Guard Training Center in Cape May; Capt. Robert Duin, chief of the ocean engineering division at Coast Guard headquarters; Rep. Charles W. Sandman Jr. of New Jersey, and the mayor and civic officials of Cape May.

Convair was represented by David B. Dewey, project manager for Coast Guard buoys, and F. Gordon Brickson and Sherman Cohen, both project engineers.

Nancy Steele, Miss Cape May of 1970, released a lanyard to start the new 2 Alpha to its station at Sandy Hook. The buoy, ballasted on station to 104 tons, was reported functioning well after being placed in operation.

The second and third of the seven new Mark II buoys being produced by Convair under contracts totaling about $1 million are scheduled for delivery to the Coast Guard early next month.

One will be moored at the site of the Barnegat lightship at Barnegat Reef off the New Jersey coast and the other will replace the Delaware lightship off Delaware Bay.

Two others to be delivered later will be located at sites of the San Francisco lightship at the entrance to San Francisco bay and of the Blunts Reef lightship south of Humboldt Bay off the northern California coast.

Each of the seven buoys will replace a lightship costing about $3 million and with a crew of 15 to 19 men plus support personnel ashore. The buoys are unmanned and their systems are controlled and monitored from shore by UHF radio.

While their primary function is to guide ocean shipping, each is designed to permit addition of oceanographic and meteorological sensors for reporting of ocean and atmospheric conditions.

The buoys will operate for months without maintenance and are equipped with a powerful signal light, radio beacon, and sound signal-foghorn to provide navigational aids to ocean-going vessels. They are designed to withstand hurricane conditions of 150-knot winds, 60-foot waves, and 10-knot currents.

Dewey said the Mark II buoys incorporate several operational design changes.

They are powered by continuously operating engines and alternating current generators instead of propane-fueled engines and direct current generators; have four rather than three-foot-diameter superstructures; and have added flexibility for storage of fuel, ballast, and urethane foam for buoyancy through redesign of 16 peripheral internal compartments.

The design permits single or three-point mooring by conventional anchors.

Dewey said the prototype 2 Alpha buoy is scheduled to be transferred to the Navy and refurbished for future use as a data collection buoy in West Coast waters.

Asst. Secy. of Navy Tours Electric Boat

Frank P. Sanders, Assistant Secretary of the Navy, installations and logistics, was a visitor at Electric Boat division last month.

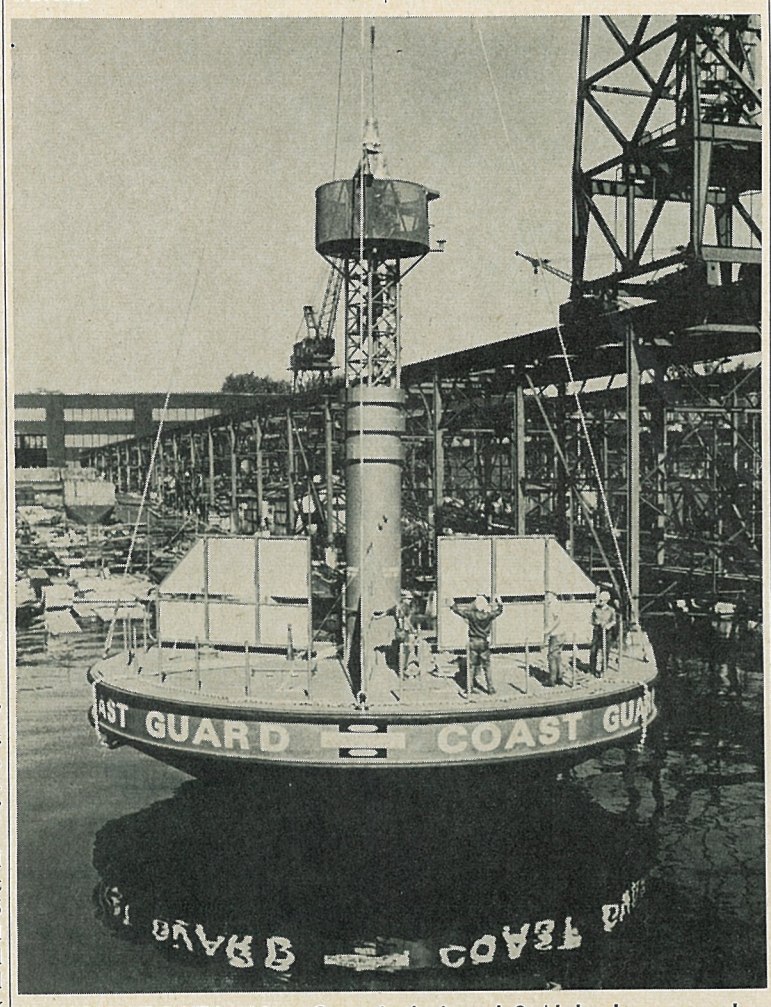
He toured the yard and the submarine tender USS Fulton and conferred with Joseph D. Pierce, division general manager, and Capt. Albert E. Rose Jr., Supervisor of Shipbuilding.

EZ DUZIT

Twin Research Subs Going on Navy Duty

Twin research submarines Sea Cliff and Turtle, built at Electric Boat division, have completed sea trials in the Bahamas.

Sea Cliff will be operated by the Office of Naval Research at Woods Hole (Mass.) Oceanographic Institution. Turtle will be used by the Navy's Atlantic Undersea Test and Evaluation Center.



BUOY AT BATH—New Convair-designed 2 Alpha buoy now being used by Coast Guard as lightship replacement casts interesting reflection at Bath Iron Works in Maine where its hull was fabricated. It is first of seven Mark II buoys being produced under current Coast Guard contracts.

Million and Half Pounds Of F-111 Parts Built at SD

The 1,500,000th pound of Convair-produced flight-article hardware for F-111 sweep-wing fighter and bomber aircraft was completed recently in Dept. 027 at Air Force Plant 19 in San Diego, and trucked to the Forth Worth division.

The record-setting pound may have been included in a 12-foot-long by 5-foot-high aft-center fuselage side assembly that will form an F-111 nacelle air inlet duct structure. Or it may have been represented in a I-78 spike, a 30 by 120-inch structure that tapers to a point at both ends and that will be installed in an engine air inlet to regulate airflow for optimum engine performance.

W. S. Stroud, Convair F-111 program manager, said F-111 production currently ranks as the third largest single program at Convair. Late last month there were 1,725 direct-budget employes assigned to F-111 production—while the DC-10 program had 2,092 and launch vehicle programs had 1,826.

Harry Rote, factory superintendent for F-111 assemblies, said F-111 parts production at Convair began in 1967 with fabrication of only four items—pivot armament pylons, fixed pylons, forward electronics bays, and stabilization booms.

The program later grew to include production of aft-center fuselage side assemblies, fixed-cowl and blow-in door assemblies, the I-78 spikes, 600-gallon external fuel tanks, fixed and pivot fuel tank pylons, weapons bay tanks, inlet fiberglass and ram panels, ferry wing tips, wing pivot fittings, and miscellaneous detailed parts.

Convair also provides static and fatigue articles and testing, mechanical and electronic ground equipment, and wind tunnel and other technical assistance for the F-111 program.

R. A. Gilstrap, Dept. 226-1 traffic representative, said 243 special trucks transported F-111 production parts from Convair to Fort Worth division last year and that 115 made similar deliveries during the first eight months this year.

"F-111 production is really a division-wide effort at Convair," Stroud said. "Engineering, tooling, fabrication, material, purchasing, inspection, quality control—all are directly involved."

Stroud said an expected follow-on contract for production of hardware for 24 additional F-111s should extend Convair's support activities through April, 1972.

Navigation System For FB-111A Delivers Excellent Performance

F-111A No. 25 stayed close to its desired course during a recent 10-hour quick-reaction, airborne-alignment test of the FB-111A navigation system prototype.

Val Prahl was pilot and James Fritz navigator on the Category I mission over southwestern states.

In the demonstration, the aircraft's Mark IIB navigation system was given initial position information and aligned in flight. The system was never updated subsequently by use of the attack radar, but used only the doppler radar as a velocity reference.

"Normally," says Bob McLendon, group engineer, "the aircraft's navigation system is 'warmed up' and aligned before flight. Information is then routinely used throughout the flight from the attack radar to aid the navigation system in minimizing errors.

"On this 10-hour flight, the navigation system was aligned in flight after takeoff. The system then 'took over' for the rest of the mission, supplying the crew with the precise airplane location, speed and heading at all times, location and distance to their next destination and turning point, and the location of each radar sighting point as it became available during the flight.

The flight simulated a long, circuitous mission to a target over a barren area—such as a large body of water—in which the navigation system must function "on its own" for long periods.

On this flight, the system performed "extremely well." It kept No. 25 virtually on a perfect path throughout.

"It's hard to describe just how accurate this is," McLendon says. "But it's comparable to driving across the United States without the aid of road maps, highway markers, or signs and knowing where you are within a few feet during the entire trip."

A similar analogy was used three years ago when two F-111s flew from the U.S. to England without refueling.

Maj. Thomas Wheeler Jr., then AFPRO and pilot of one of the ships, was highly impressed with the F-111's navigation system.

"We were only a little over a mile off course when we hit the coast of England," he said. "This is a truly incredible navigation feat—like threading a needle in the Atlantic. Our system was so accurate that a tanker accompanying us on the flight was constantly asking for navigational information."

No. 25's system capability is superior to the one used on those early F-111 flights to England, McLendon points out.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 23, No. 18 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, September 30, 1970

AC-21 Prepared For Countdown At Complex 36B

Convair Aerospace division's Atlas-Centaur 21 is being readied at Launch Complex 36B at the Eastern Test Range for launch of NASA's Orbiting Astronomical Observatory-B.

A 24-man team from the Kearny Mesa plant under the direction of Deane Davis, Centaur program manager, has been at ETR for a week for a detailed review of the AC-21 launch vehicles—Atlas SLV-3C 5003 and Centaur 18D.

OAO-B will be the second of three NASA-sponsored missions to give astronomers an undistorted look at the universe from above the earth's atmosphere. The AC-21, from the tip of the OAO-B nose fairing to the bottom of the Atlas engine skirts, measures 135 feet.

The 4,690-pound OAO-B spacecraft, 230 pounds heavier than the OAO-A2 launched with precision in 1968 by Atlas-Centaur 16, is to be injected into a 405-nautical-circular orbit, inclined 35 degrees to the equator, and is to orbit the earth every 99.8 minutes. Its orbit will be 12 nautical miles lower than that of the OAO-A2.

Ed Riemer, senior flight test engineer in test planning and control, said the OAO-B and OAO-A2 will be in similar orbits but will pass the equator simultaneously while on opposite sides of the earth in order to aid in data acquisition.

OAO-B will carry a NASA Goddard Space Flight Center experiment "package" to obtain data on selected stars, nebulae, and galaxies in the 1,000 to 4,000 Angstrom (ultra-violet near-visible spectrum) region. The optical system to be used includes a 38-inch cassegrain telescope with a large-aperture spectrophotometer.

After AC-21's Atlas booster and sustainer engines power the first four minutes of flight, the Centaur's high-energy liquid hydrogen engines will burn about 7½ minutes to place the spacecraft in desired orbit. A right yaw "dog leg" maneuver will be executed during the Centaur-powered portion of the launch to position the vehicle and spacecraft in esired orbital inclination.

After Centaur engines shutdown, the OAO-B's solar paddles and balance booms will be de-

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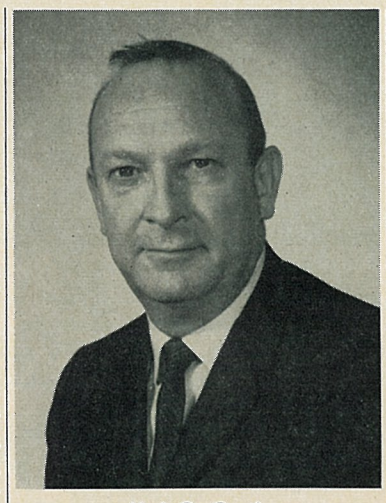


Mel C. Curtis

Firemen Voting On 'Miss Torch'

Firemen from the Convair Aerospace division plants in San Diego are selecting a "Miss Torch" to add a touch of beauty to a division crash truck that will be entered in San Diego's annual Fire Prevention Week parade Oct. 3.

The 60-unit parade, including antique as well as modern fire rigs, will begin at 10:30 a.m. and move east along El Cajon Boulevard from Normal Street to 60th Street.

Each division fireman was to cast a vote for his choice of nine finalists in the "Miss Torch" competition — with D. D. Dimmitt, chief of safety and fire, to vote in case of a tie.

Finalists were:

Nalatia Fortney, 27, a second-shift keypunch operator in Convair's Dept. 101-6 hailing from Dayton, Ohio.

Patricia Gramling, 23, a department clerk in Convair's Dept. 130-6 now also studying sociology at Mesa College and formerly from Phoenix.

Barbara Grigsby, 25, a secretary in Electronics-SD's Dept. 618 who formerly was employed at Stromberg DatagraphiX and is a graduate of Western Reserve University in Kalamazoo, Mich.

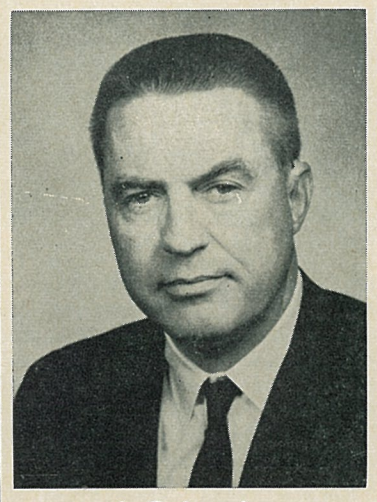
Claudia Huback, 27, a department clerk in Convair's Dept. 110-2 and a Clairemont High School graduate.

Mary Martin, 24, a secretary in Electronics-SD's Dept. 206 hailing from Montrose, Colo, and also a former DatagraphiX employe.

Diana Moore, 24, a clerk in Convair's educational services Dept. 130-3 and a Lincoln High

(Continued on Page 2)

"TORCH" FINALISTS—Bevy of beauties who are finalists in Convair Fire Department's "Miss Torch" competition strike pretty pose on fire rig. From left are Nalatia Fortney, Earlene Theilacker, Claudia Huback (at wheel), Barbara Grigsby, Barbara Reed, Susan Snyder, Patricia Gramling, Mary Martin, and Diana Moore. "Miss Torch" will add interest to crash truck in annual Fire Prevention Week parade.



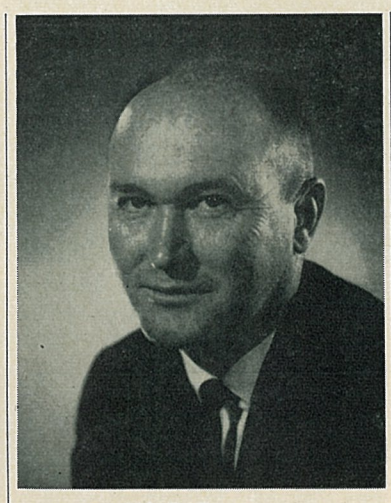
L. C. Josephs

General Manager Urges Fire Safety

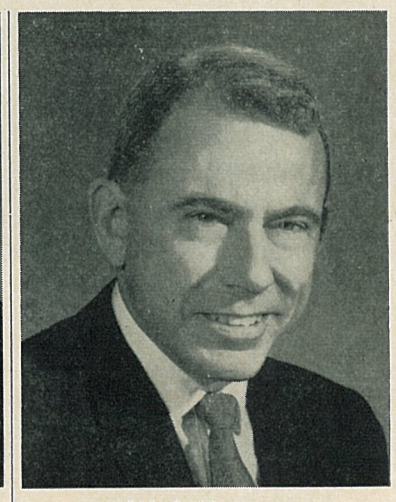
Following is a statement from Lyman Josephs, Convair Aerospace division vice president and general manager-San Diego, in conjunction with observance of Fire Prevention Week:

"Every year for the last 10 years fire has claimed a life every 47 minutes. More than 3,000 major fires occur each day in the United States. Of the million fires recorded in this country each year, more than a third of the large-loss fires are in industrial plants.

"I urge everyone, from first-line supervision to the newest member of Convair Aerospace ranks, to devote particular attention to fire safety—not only during Fire Prevention Week, Oct. 4 through 10, but every day of the year."



W. E. Bratton



W. J. Morrow

Convair Aerospace, Electro Dynamic Divisions Formed

Roger Lewis, president of General Dynamics, has announced formation of two new divisions, the Convair Aerospace division and the Electro Dynamic division.

This implements the company's decision, announced Aug. 19, to reorganize its operations to permit a more rapid and effective response to the needs of the Department of Defense and NASA.

The Convair Aerospace division combines the former Fort Worth division and the aircraft and space activities of the Convair division. The Electro Dynamic division combines the former Pomona and Electronics divisions and the electronics operations of the former Convair division.

Both new divisions will report to Dr. George E. Mueller, senior vice president of the Corporation. The Convair Aerospace division will be headed by Frank W. Davis and the Electro Dynamic division by Jack L. Bowers, both of whom will report to Dr. Mueller.

"These two new divisions," Lewis said, "will allow us to offer improved capability by bringing complementary skills under single management, eliminating duplication of effort and facilities and providing tight control of operations."

Dr. Mueller joined General Dynamics last December from the National Aeronautics and Space Administration where he was associate administrator for manned space flight. Davis has been with General Dynamics for 30 years and has headed the Fort Worth operation since 1959. Bowers has been with General Dynamics more than 20 years and has been head of the Convair division since 1965.

Dr. Mueller and Davis said that the Convair Aerospace division will continue to specialize in the design, development and production of high performance military and commercial aircraft and systems for space exploration. Davis will maintain offices in both Fort Worth, Texas and San Diego, Calif. at the new division's two principal operations. He named Mel C. Curtis vice president and general manager of the Fort Worth operation and Lyman C. Josephs vice president and general manager of the San Diego operation.

Dr. Mueller and Bowers said that the Electro Dynamic division will engage in tactical missile and other ordnance programs and a broad range of electronics programs including communication, instrumentation, range and data systems, ground support and anti-submarine warfare systems, ocean data stations and electrical machinery for both military and commercial use.

Bowers will maintain offices in both Pomona, Calif., and San Diego, and has named W. J. Mor-

(Continued on Page 2)

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—What is the average time required to receive Savings and Stock Investment Plan money when an employe is retired or laid off?

A—Six to eight weeks after the end of the month in which termination takes place. Bankers Trust Co. has 30 days for buying, selling and arriving at closing values. Processing then takes two to four weeks.

★ ★ ★

Q—Why are departments permitted to push broken down chairs into hallways where they sit collecting dust?

A—Proper procedure for disposing of surplus furniture is to notify plant engineering (property records) mail zone 250-02 by memo, listing the items. Surplus furniture should not be placed in aisles expecting janitors to take action. It isn't their job.

★ ★ ★

Q—It is often very time consuming trying to obtain a WATS line. Can't service be improved?

A—Traffic studies indicate that the number of WATS lines utilized by Convair is optimum except for peak periods. Considering the cost of service (each line is in excess of $25,000 a year) it is more economical to experience delays than add additional lines.

★ ★ ★

Q—Since the 900 departments no longer have outside phone accessibility, would it be possible to provide the operator with numbers of supervisors' unrestricted phones so engineering personnel can be reached from the outside? I realize personnel can be reached in real emergencies but there are instances of not such urgency but still important to individuals.

A—Employes assigned to restricted phones, who have a need to receive calls from outside, should obtain permission from supervision to give the calling parties the extension number of a convenient unrestricted phone.

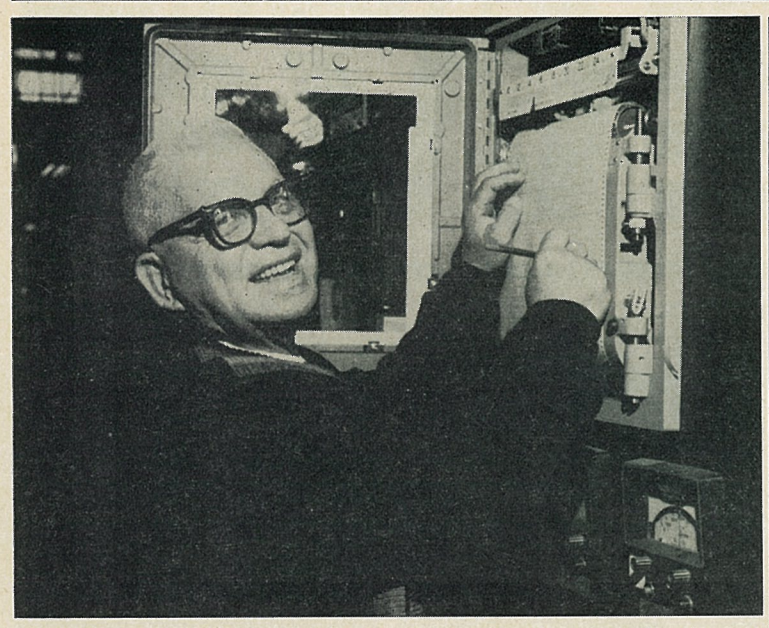
★ ★ ★

Q—Every year an effort is made to increase buying of

(Continued on Page 4)

Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, Oct. 17. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. Also not permitted are canvas or open-toed shoes and bare feet.



FINAL CHECK—Leo Niemet reads heat treat gauges for the last time. He retires today, Sept. 30, after 42 years of service—all in heat treat.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Sept. 16 and Sept. 30.

Thirty-five-year: Dept. 532, Willard H. Fink; 988, Dalton B. Suggs.

Thirty-year: Dept. 001, B. E. Goss Jr.; 015, H. W. Brightwell; 027, H. J. Hildebrand; 046, J. R. Hernandez, L. L. Ripley; 105, O. W. Harper; 170, M. H. Jahn; 195, C. O. Rhea; 196, H. A. Kayes; 202, E. L. Johnson; 204, B. E. Cavin; 250, C. W. Carlson, S. J. Hawkins; 401, M. P. Rebeles; 403, R. C. Neaves; 420, A. J. Kent, N. B. Powell Jr., C. Renkke; 532, W. J. Darracq; 545, R. R. Parga Jr.; 583, W. V. Carter; 756, T. N. Moraga; 759, D. A. Hottell; 761, F. E. Smalley; 840, T. F. Jones Jr.

Twenty-five-year: Dept. 019, J. B. Holland.

Twenty-year: Dept. 027, R. D. Harvey; 031, C. B. Wilhelm; 046, L. C. Palmer; 110, C. B. J. Dutton; 149, E. N. Costello; 193, W. B. Brooks; 202, F. W. Sterling; 226, Lois W. McHugh; 228, D. P. Angle; 407, G. J. Kureri; 518, E. Capossere; 526, D. P. Wright Jr.; 545, J. F. Dzialowy; 579, E. Schiff; 587, L. F. Mastny; 734, R. L. Brockway; 761, J. Camfferman, P. Gasca; 780, Delfina C. Blanco, T. A. Hutchinson; 831, B. H. Garrett.

Fifteen-year: Dept. 015, G. C. Bertrand, R. Danner Jr.; 105, L. J. Hayes; 117, A. Kalitinsky; 130, P. D. Bitts; 146, N. T. Keith; 170, U. Eatmon, R. A. Wallace; 195, S. J. McMillan; 222, R. C. Hickman; 229, H. B. Scott; 250, L. E. McGinnes; 401, N. D. Ingram, C. H. Strong, R. G. Whalin; 507, Harriett M. Fisher; 512, W. F. Wennhold; 518, W. Zearing; 532, J. E. Stumm; 541, P. A. Moallankamp; 544, D. E. Williams; 584, D. S. Oesterle; 595, J. Laguna; 761, J. J. Marten; 780, W. A. Gray; 979, J. E. Hart, H. G. Yett; 999, A. D. Rinaldi.

Ten-year: Dept. 015, R. T. Work; 027, J. J. Marten; 053, Helen T. Murphy; 101, Arletta M. Mischer, D. R. Fuller, Lydia Q. Telles, Billie G. Thornton; 131, E. F. Feeney, T. G. Hyde, A. E. Sutorus; 149, J. P. O'Brien; 191, G. E. Peace; 227, B. A. Kodger; 400, C. D. Lane, R. D. MacGregor, H. M. Ryden; 553, F. Isler; 583, W. H. Gallaher; 584, K. E. Leonhard; 588, W. D. Honeycutt; 589, R. H. Utschig; 598, A. Ender; 954, L. D. Messacar; 979, A. R. Padilla, D. C. Schuermann; 988, D. L. Browning.

ELECTRONICS

Twenty-five-year: Dept. 566, H. D. Kuykendall.

Twenty-year: Dept. 425, N. G. Neault; 614, E. S. Langworthy.

Awards

CONVAIR

Employe Suggestion awards approved for week ending Sept. 11:

E. S. Budzinski, Dept. 031-0, $7.50; R. R. Clarke, 015-0, $15; G. Grande, 013-0, $7.50; R. M. Gregoire, 046-0, $15; L. M. Guess, 059-2, $66.20; M. D. Herndon, 001-0, $15; E. J. Jaeschke, 027-0, $34; R. V. Lucero, 019-0, $13.50; W. W. Noviensky, 001-0, $14.65; L. D. Rush, 046-0, $49.50; I. E. Schulz, 533-1, $15; B. G. Sherwood, 988-1, $15; J. R. Stearns, 046-0, $15; D. D. Thompson, 019-0, $13.50; M. H. Thrasher, 001-0, $14.65.

Employee Suggestion awards approved for week ending Sept. 18:

A. R. Anderson, Dept. 027-0, $60.30 (four awards); A. Aron, 574-2, $43.40; D. L. Bolger, 860-0, $231.70; E. S. Budzinski, 031-0, $7.50; L. J. Campbell, 979-1, $15.70; A. R. Carvajal, 401-9, $15; P. M. Castillo, 400-3, $15; L. H. Cooke, 149-8, $15; B. A. Dill, 565-3, $525; S. J. Gwazdacz, 780-4, $181; G. S. Ham, 046-0, $14.80; H. A. Hartley, 979-3, $22.30; L. Hudson, 031-0, $15; J. M. Londt, 227-1, $315; P. J. Lord, 015-0, $16.50.

Also M. M. Madrid, 842-0, $15; J. E. Matthews, 507-0, $15; L. A. McGraw, 059-1, $15; W. A. McGrew, 407-0, $169; E. J. McInvale, 031-0, $7.50; M. B. Murrah, 780-4, $181; J. M. Neal, 518-1, $82; D. B. Offerman, 567-1, $294.80; B. J. Pepe Jr., 407-0, $30; F. M. Russell, 979-4, $15.70; B. M. Stegall, 059-4, $30; E. C. Steeger, 842-0, $15; H. N. Sylvester, 512-3, $113.90; H. R. Van Hoose, 149-6, $40.60 (two awards); W. A. Wherry, 046-0, $14.80; R. F. Whyte, 194-0, $67.80; L. H. Wilson, 027-0, $15; M. L. Wilson, 015-0, $15.

Papers Presented

CONVAIR

BRUSCH—Dr. R. G., Dept. 986-3, and SCHAPPELLE, R. H., Dept. 595-4, "Solution of constrained optimal control problems using nonlinear programming"; AIAA Guidance, Control, and Flight Mechanics Conference, Aug. 17-19, Santa Barbara, Calif.

HAZELRIGG — Dr. G. A. Jr., Dept. 583-0, "Optimal Interplanetary trajectories for chemically-propelled spacecraft"; AIAA/AAS Astrodynamic Specialists Conference, Aug. 19-21, Santa Barbara, Calif.

"Cost Reducers"

CONVAIR

Cost Reduction Achievement pins presented:

Five-credit pins—J. J. Boyer, Dept. 045-0; W. W. Nobiensky, Dept. 001-0.

Rider-Driver

CONVAIR

RIDE WANTED — From Clairemont (near Quad) to Lindbergh Field plant, 8 a.m. to 4:45 p.m. shift. Call Claudia Huback, LF ext. 630.

Personals

CONVAIR

Your kind expression of sympathy at the death of Bert Cvikota is deeply appreciated and gratefully acknowledged.

Lottie Cvikota and family

* * *

Your kind expressions of sympathy and beautiful flowers were greatly appreciated.

Mrs. Robert M. Dunbar and family

* * *

We want to express our deep appreciation for all the many acts of kindness shown us at the death of our loved one, Lester O. Scarbrough. It meant so much to us.

Mrs. Lester O. Scarbrough and family

Deaths

CONVAIR

CVIKOTA—Baltazar, retired Jan. 6, 1961, Dept. 31, died Sept. 2. Survived by his wife, Lottie.

DUNBAR—Robert M., retired Jan. 30, 1970, Dept. 587, died Sept. 9. Survivors include his wife, June.

ELDER—A. A., retired Jan., 1963, died Aug. 26.

LEEDOM—Corwin W., retired Dec. 1967, Dept. 833, died Sept. 13.

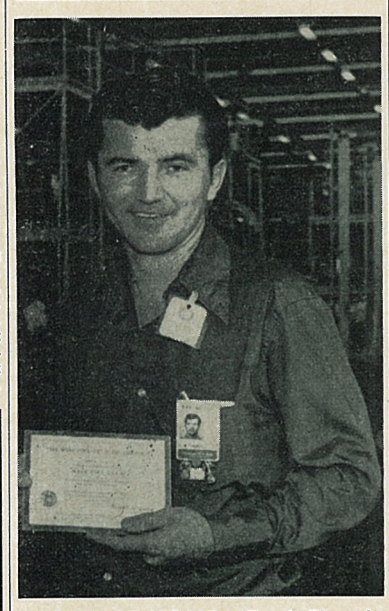
SMITH — R. R., retired Feb., 1957, Dept. 115, died Sept. 1. Survived by his wife, Loretta.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair Aerospace editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P. O. Box 1950, San Diego 92112.



SAFE AT HOME—Fred Church, Dept. 046 aircraft assembler, displays Wise Owl membership certificate he qualified for after safety glasses prevented injury during home accident. Church was removing back of couch when tension spring snapped shattering left lens.

Firemen Voting On 'Miss Torch'

(Continued from Page 1)

grad.

Barbara Reed, 32, a steno-secretary in Convair's Dept. 053-0 and a graduate of El Cajon High

Susan Snyder, 27, a steno-secretary in Convair's Dept. 053-0 and a graduate of La Jolla High and San Diego State College.

Earlene Theilacker, 33, a publications aide in Convair's Dept. 524-5 and formerly from Haystown, Tenn.

* * *

Demonstrations in use of fire extinguishers are scheduled daily at Kearny Mesa, Lindbergh Field and Air Force Plant 19 during Fire Prevention Week, which is being observed nationally Oct. 4 through 10. The demonstrations will be held during lunch hours near mobile canteens and lunch stands and adjacent to the fire station at Kearny Mesa.

A special demonstration of rapid smothering of a gasoline fire is scheduled at 10:30 a.m. Oct. 6 in the fire department drill area west of Runway 13 at the Lindbergh Field plant.

Payroll checks during Fire Prevention week will be distributed in envelopes carrying the message "Fire Prevention Pays Also."

Effigies of firemen holding Fire Prevention Week posters will be placed at most plant entrances during the week, firemen will distribute pamphlets at all gates, and posters will be used to highlight fire safety at 120 in-plant locations.

Each of the plant fire department vehicles also will be outfitted with Fire Prevention Week signs.

Special in-plant fire inspections are scheduled—with a trophy to be awarded to the department with the smallest number of discrepancy points per employe.

Fire department officials will be giving fire safety talks at each of the drills, demonstrations, and inspections during the week.

Representatives from the San Diego fire department will be guests of Convair firemen for tours and briefings on division fire safety programs. Fire Marshal Hugh Rae is handling invitations and scheduling the tours.

A scrapbook outlining participation of the Convair Aerospace division San Diego plants will be entered in a contest being sponsored by the National Fire Protection Association. Capt. J. P. White is preparing the contest entry.

Dimmitt said Convair Aerospace-SD's participation in Fire Prevention Week has been planned as a means of getting all employes to think critically about fire safety and possible fire hazards.

"By emphasizing fire safety, we hope to motivate all employes to eliminate all known potential fire hazards—both in their plant work areas and at their homes," he said. "If this saves a life or an employe's home our efforts will have been well spent."

Adventurers to Visit Mexico Back Country

CRA Adventurers have two weekend outings slated during October. A tag-a-long desert trip into Mexico is planned Oct. 3-4, exploring Laguna Salada wood cutter trails.

Strictly for 4-wheel drive or off-the-road vehicles, those making the trip will follow-the-leader through Mexico on unimproved sand and dirt roads. The canyons and foothills of the Sierra Juarez range is the final destination and overnight camp site.

Rendezvous time is 8 a.m. Saturday at the Tecate border crossing. For information call John Smaldino, trip leader, 279-2798.

A backpack trip to the peak of San Jacinto from Idyllwild is scheduled Oct. 24-25. Details will be announced at the Oct. 21 meeting or call Everett Ames, trip leader, ext. 3674 KM or (home) 459-6412.

SAVING SYMBOLS—Special awards to be given for Convair Employe Suggestions and Cost Reduction and Value Control projects are shown by Patti Simmons, Dept. 130-1 security receptionist, and Ray Harris, Dept. 810-0 purchasing agent. Both key chains and pocket savers carry inscription "I joined the Convair cost reduction team."

Key Chains, Pocket Savers Await New 'Cost Cutters'

Colorful flower-petal key chains for women and plastic pocket-saver badge and pin holders for men are to be given employes who submit Employe Suggestions and Cost Reduction and Value Control projects for the first time this year during the fourth quarter.

Charles L. Baker, cost reduction and value control administrator, Dept. 192-0, said the awards have been instituted to call additional attention to the division's objective to increase employe participation in the cost reduction program by 20 per cent this year over last year's record.

The key chains and pocket savers, now on order, will be distributed automatically to those submitting their first ES, CRP, or VCP of the year after Sept. 15. Each key chain and pocket-saver carries the inscription "I joined the Convair cost reduction team."

Baker said 3,518 Convair people must participate in the cost reduction program by year's end if the division is to meet its objective for increased participation.

About 2,800 individual participants had been recorded during the first three quarters—2,355 of whom had turned in Employe Suggestions.

Each employe submitting an ES for the first time during the fourth quarter will receive a key chain or pocket-saver, regardless of whether the ES ultimately is approved.

The employe also will receive 10 per cent of the first year's estimated saving from each ES that is approved and implemented.

Convair Aerospace, Electro Dynamic Divisions Created

(Continued from Page 1)

row as vice president and general manager of the Pomona operation and William E. Bratton as vice president and general manager of the San Diego operation.

Lewis announced that Charles F. Horne, a Corporate vice president and president of the former Pomona division since 1961, will continue as a Corporate vice president reporting to Dr. Mueller until he reaches normal retirement age in January, 1971. Lewis noted that the company has made significant contributions to the development of tactical missiles under Horne's leadership for the past 10 years.

Besides San Diego and Pomona, the new division will have major facilities in Avenel, N.J. and Orlando, Fla. Owing to decreasing business at the Electronics plant in Rochester, N.Y. that facility will be gradually phased out and closed early next year.

Among appointments involving the Electro Dynamic division were: L. E. Spear, vice president for program planning, stationed at San Diego; C. D. Perrine Jr., vice president for tactical weapons program with offices in Pomona; A. D. Shawkey, division director of contracts and pricing in San Diego; J. C. Cannady, division controller, stationed in San Diego.

Convair Aerospace division staff members at San Diego remain essentially the same. However, reporting directly to Davis, in addition to Curtis and Josephs, are Fred J. Bettinger, director of public relations; H. C. Jones, vice president contracts and pricing; J. D. Milling, controller; E. E. Hatchett, vice president management and operations.

Kathy Mix Winner In Women's Golf

Kathy Mix with net 71 took top honors in the General Dynamics Women's Golf Club's September tourney over Whispering Palms links. Joan Sjoblom was runner-up with net 76 and Mable Humphries took third.

All General Dynamics women are invited to participate in the Balboa Municipal tournament scheduled for Oct. 10 with a 9:59 a.m. tee-off time. For reservations or information call Freda Magargal, ext. 1637 KM.

AC-21 Prepared For Countdown At Complex 36B

(Continued from Page 1)

ployed and the spacecraft will b separated. The Centaur then wi be turned and its orbit changed through "blowdown" of remaining propellants so the Centaur tank will not be in a position to reflect light on the OAO's star tracker optic system.

Convair Aerospace personnel from San Diego who were at ETR for the AC-21 product review, in addition to Davis, and areas represented were:

Ed Lindgren, Centaur-program office; John Swigart, Atlas-program office; Karl Kachigan, LVP engineering; Charles Bierman, design; Al Vinzant, Centaur propulsion; Mike Debreceni, Atlas propulsion; John Soltmann, hydraulics; Robert Nelson, Atlas pneumatics; Fred Anding, Centaur pneumatics; Charles Prucl ner, Atlas structures; James Heffron, Centaur structures; Robert Shoff, Atlas autopilot; Walter Sauer, Centaur autopilot; Fred Kuenzel, guidance; Robert Vogel, propellants utilization; Ted Shamshoian, electrical; Loren Batchman, radio, range safety, and telemetry transmitter; Frank Cook, instrumentation and telemetry; Phil Yip, thermodynamics; Paul Buchy, stress; John Silverstein, electronics reliability; Bert Wiest, mechanical reliability; and Richard Menafee, Rocketdyne representative.

SAMSO VISIT—About 120 Air Force Space and Missile Systems Organization personnel and family members were guests of Convair on a recent Saturday for a presentation on division launch vehicle programs, a tour of Kearny Mesa plant, and lunch at Missile Park. From left, G. L. Davis explains computer operations; chefs from Prophet Co. serve roast beef lunch; and group gets "feel" of launch vehicle skin. Ken Newton, director of Convair launch vehicle programs, gave presentation on General Dynamics and Convair product lines and visitors saw "Go Atlas! Go Centaur!" film. SAMSO officials present included Col. Hugh Wynne, director of standard launch vehicles, and Col. Charles Wurster, deputy director. Several DCAS representatives also attended.

Fort Worth Facility 'Doubles' As Cogswell Award Winner

Fort Worth recently became the first aerospace contractor to win the James S. Cogswell Award twice.

The award is presented each year for the "outstanding performance in administration of Department of Defense industrial security program." Fort Worth also won the award in 1967.

Announcement of the award was made by Joseph J. Liebling, Deputy Assistant Secretary of Defense, office of the assistant secretary, Department of Defense, at the 16th annual seminar of American Society for Industrial Security in Boston recently.

I. B. Hale, manager of industrail security at Fort Worth and president of ASIS, received word of the announcement at the seminar.

Over 1,300 industrial firms in the United States have Department of Defense clearances to perform on classified contracts and are eligible for the honor.

Factors in selecting a winner include: degree of security-consciousness evidenced by management personnel, security education and motivation programs by contractors for employes, regular inspection of security practices, security review procedures in publications, and adaptation of new security methods in such areas as reproduction and transmission of documents, control of movement of employes, and visitors within the plants.

The award is named in honor of Col. James S. Cogswell, USAF (ret.), first chief of centralized office of industrial security, established under the deputy director for contract administration services of the Defense Supply Agency in 1965.

TCU Degrees Reward Mgt. Assn. Members

A number of FW Management Association members have earned various degrees from Texas Christian University recently in the TCU-MA program. They are:

MBA degree — J. L. Bracey, Dept. 065-4; L. T. Clark, 277-0; D. C. Henry, 111; R. H. Johnson, 060-3; V. D. Matney, 271-2; H. E. Boyd, 12; P. E. Edwards, 8; and A. N. Linsenbardt Jr., 208-1.

MA degree—D. R. Moore, 233-2; and G. F. DeShazo, 111.

BBA degree — B. H. Bailey, 272-3; D. D. Edgar, 272-1; W. M. Ferguson, 065-1; G. C. Nunn, 88; G. A. Tatum, 289-1; M. B. Lee, 235-2; and B. W. McKinley, 283-2.

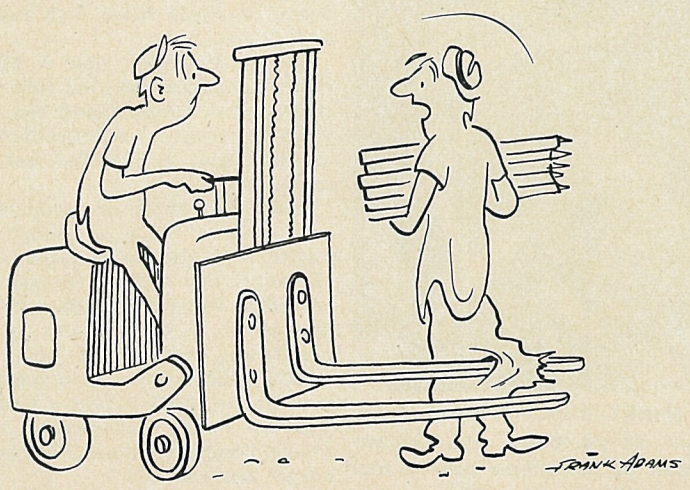
BA degree—J. M. Abbott, 062-4; B. F. Bone, 281-1; R. B. Bryson, 288-2; R. M. Harris, 283-1; C. S. Kring, 288-2; and H. W. Thompson, 7-0.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

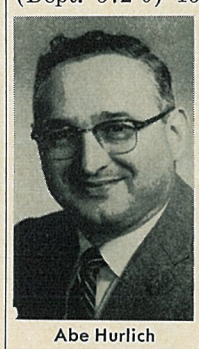
MARVIN N. DELPERDANG (1967) from Electronics-SD to Convair division as production control project analyst; **DONALD B. WILSON** (1969) from Pomona to Canadair Limited; **JAMES MINER** (1964) from Pomona to Convair as senior dynamics engineer; **JOHN WILLIAMS** (1953) from Quincy Shipbuilding to senior cost analyst, Electric Boat; **GERALD J. BLUMENTHAL** (1958) from Electronics-SD to graphic designer, Convair; **ERNEST C. WALLEY** from Canadair Limited to Convair as master schedules supervisor; **HERMON J. SUMNER** (1939) from Stromberg DatagraphiX to tool and manufacturing engineer, Convair; **PAUL C. SHERERTZ** (1962) from DatagraphiX to Convair as engineering staff specialist; **MARVIN R. DUNLAP** (1962) from Convair to contract administrator, Electronics-SD; **JACK E. FOSTER** (1952) from Convair to Electronics-SD as senior contract administrator.



"Oh, that's all right. Any blundering, stupid, fat headed idiot could have done the same thing!"

Hurlich Named 'Fellow' By ASM

Abe Hurlich, manager of materials and structures technology (Dept. 572-0) for Convair Aerospace-SD, has been elected one of the first Fellows of the American Society for Metals (ASM). The honor will be conferred Oct. 18 by the 40,000-member society at an Inaugural Convocation of Fellows in Metals Park, Ohio.



Abe Hurlich

Hurlich has been an ASM member 33 years and has served as chairman of the San Diego chapter and on several ASM national committees. He also has written many articles published in Metal Progress, the ASM monthly magazine.

During 14 years with Convair and the former Astronautics division, Hurlich has served as a design specialist, research group engineer, senior design group engineer, chief of materials research, manager of materials and processes, and manager of materials and structures technology.

He holds a degree in metallurgical engineering from the University of Michigan and formerly had served as chief of the metallurgical engineering lab at the U.S. Army's Watertown Arsenal in Massachusetts.

He is a member of the National Materials Advisory Board — an operating arm of the National Academy of Science-National Academy of Engineering—which serves in an advisory capacity for the Department of Defense, NASA, other government agencies, and metals producing and using industries on matters of national interest in the field of materials.

Eight Taking Part In SAMPE Meeting

A number of employes from Fort Worth and San Diego will participate in the 1970 national SAMPE Technical Conference in Dallas Oct. 6-8.

The conference is being sponsored by Dallas/Fort Worth Chapter of Society of Aerospace Materials and Process Engineers. Theme is "Aerospace Adhesives and Elastomers."

Papers are being presented by Dr. Paul L. Merz and L. C. May, both Dept. 572-10 at San Diego and G. H. Hayward, Dept. 061-3. and H. J. Weltman, Dept. 064-6 at Fort Worth.

Other Fort Worth personnel assisting are: H. P. Owen, Dept. 064-6, program chairman; R. J. Stout, Dept. 064-7, registration chairman; W. L. Toothaker, Dept. 273-4, membership chairman, and K. E. Dorcas, Dept. 064-6, session chairman.

Tours of local aerospace plants are included in the program.

Two Air Force Officers Begin Convair 'Schooling'

Two Air Force officers, Lt. Col. William M. Shaffer and Maj. Thomas L. Stuebe, were assigned to Convair Aerospace division in San Diego this month for a 10-month tour of duty in the U.S. Air Force Institute of Technology Education-with-Industry program.

This marks the 14th consecutive year for Convair's participation in the program, in which selected career officers are assigned to major aerospace company facilities for familiarization and on-the-job assignments in industrial planning and procurement.

Jack Croft, chief of educational services for Convair Aerospace-SD, handles administration of the local EWI program. Assisting is Everett Lindem, a Dept. 130-3 educational specialist.

Lt. Col. Shaffer, Maj. Stuebe, and Croft were in Fort Worth, Texas, last week for the 13th annual two-day EWI symposium, hosted by Convair Aerospace division in Fort Worth in conjunction with the Air Force Institute of Technology.

The two Air Force officers have been receiving a general orientation this month, including briefings on division management structure and familiarization with product and hardware systems.

This will be followed by meetings with department heads and their staffs before on-the-job duty assignments are made.

Lt. Col. Shaffer has been in the Air Force since 1953 and holds a degree in mathematics from Mississippi State University. He has been serving as a B-52 radar navigator with responsibility for inspection, testing, and calibration of the aircraft's avionics, communications, and similar systems.

Maj. Stuebe has been in the Air Force since 1958. He holds a degree in geology from the University of Wisconsin and a master's degree in industrial management from the University of North Dakota.

He comes to San Diego from the Manned Space Center in Houston where he served as a development engineer and operations analyst and has worked on the Apollo, Apollo Applications, Space Shuttle, Space Station, and Space Base programs.

Judge Will Discuss Drug Legal Aspects

Judge Gordon Gray of Criminal District Court No. 4 will discuss legal aspects of illicit dug use at 5:15 p.m., Oct. 7 in the FW Engineering Auditorium.

The lecture is part of a series, "The New Morality—Drug Abuse and Industry," being sponsored by Management Association.

Admission for the entire series is $2 for association members, $3 for non-members.

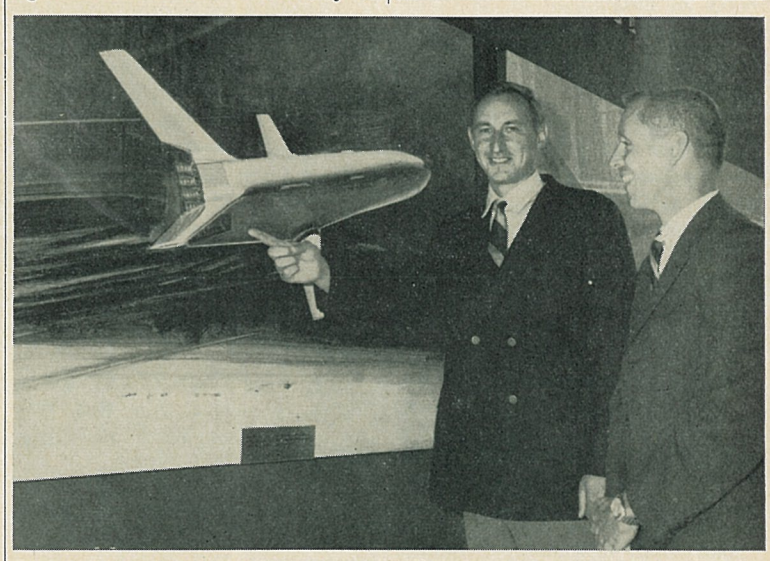
Others to appear are: Nov. 4, Dr. Howard Wible, vice chancellor for student affairs at TCU; Dec. 2, Dr. Alfred Jones, clinical psychologist; Jan. 6, Dr. Saul Sells, director of the Institute of Behavioral Research at TCU; and Feb. 3, Dr. Herbert G. Rush, psychiatrist with the Fort Worth Neuropsychiatric Hospital.

Further information is available from J. E. Wicker, ext. 5074, or W. H. Hench, ext. 3053.

Computer-Generated Program Presented

John Logan, senior EDP programmer at Stromberg DatagraphiX, presented a computer-generated movie program for members of the San Diego Chapter of the Society for Information Display at a Sept. 15 meeting in the LeBaron Hotel.

Logan's program introduced latest techniques for making computer-generated motion pictures produced by a microfilm recorder and illustrated solutions to problems difficult to visualize in single picture form.



AIR FORCE "STUDENTS"—Maj. Thomas L. Stuebe, left, and Lt. Col. William M. Shaffer look over painting of Convair space shuttle booster design after arriving for 10 months of duty with division in Air Force Institute of Technology's Education-in-Industry program at San Diego.

FUN FOR ALL—Third annual Plant 19 picnic provided activities for all ages. Toddlers and youngsters competed in picnic-type games including treasure hunt, sack race and wheel barrow event, while adults enjoyed bingo, wheel of fortune, softball and horseshoe pitching contests. Over 400 raffle prizes were given throughout the day. Big winner among the 2,800 was Vic DeBolt, a Dept. 759 welder who won trip for two to Hawaii for seven day stay.—Photos by Pete Autio.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

(Continued from Page 1)

Savings Bonds by payroll deduction. Why not make this really worthwhile by forming a "closed end mutual fund" for employes only, dealing in short term U.S. Treasury Bonds paying 6-7 per cent. No company contribution would be required other than say an initial short term loan of $10,000. Employes could be permitted to buy shares by payroll deduction in $5 increments. The program could be automated into the payroll system with minimum charge for bank maintenance.

A—The purpose of Savings Bonds has changed since WWII days. They are no longer necessary to finance defense systems as they were then. Their chief advantage is their effect on control of inflation through promoting long-term savings. Savings Bonds actually do serve this purpose. Over one third of all bonds sold since 1940 have never been redeemed. The total outstanding value of Savings Bonds represents one fourth of the publicly held portion of the national debt. Redemptions of E and H bonds in 1969 was 12.7 per cent, while that of Savings and Loan withdrawals was 33.6 per cent. General Dynamics believes that it is in the best interests of the economy to encourage long-term bond buying.

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Q—Occasionally stories appear in the local press about Convair products without identifying them with Convair. Why is this?

A—This does happen, and it is not deliberate. If it is a wire story, the copy reader's tendency is to move the story as it is, with the emphasis upon shortening to space requirements. In other cases, where products are widely known (as with Atlas) the copy reader might feel that it is redundant to keep using Convair. Naturally, we are interested in seeing the Convair or General Dynamics name appear as often as possible identifying our products and over the long term the press, radio and TV have given us a reasonable share of space and time.

HERE ARE YOUR REPRESENTATIVES

An important part of democratic government is the privilege of voters' making their opinions known by writing to representatives in Congress.

U.S. SENATORS

Sen. Alan Cranston — Senate Office Building, Washington, D.C. 20510.

Sen. George Murphy — Senate Office Building, Washington, D.C. 20510.

U.S. REPRESENTATIVES

36th District — Rep. Bob Wilson, 2235 Rayburn Building, Washington, D.C. 20515.

* * *

37th District — Rep. Lionel Van Deerlin, House Office Building, Washington, D.C. 20515.

When telephoning, never mind the weather. Get to the point. Telephone time costs money.

New Low Price 'COM' on Market

Stromberg DatagraphiX, Inc. has announced a new, low price, computer - output - microfilm (COM) recorder which joins the company's family of Micromation equipment including five other business and scientific recorders.

Nicknamed MOM, for Micromation-On-Line-Microfilmer, the machine is designed for on-line operation and is designated the DatagraphiX 4200.

Purchase price for the 4200 is $49,000, complete with Universal Camera. The 4200 can also be leased under a variety of plans, all at substantially lower rates than other DatagraphiX recorders.

The 4200 converts nine-bit parallel computer output directly from any IBM 360 model 25 and up into printed text which is recorded on microfilm. It prints output data at a transfer rate of up to 30,000 lines a minute. Throughput is 13,000 lines a minute and data is transferred at rates up to 60,000 characters a second.

As with other DatagraphiX recorders, character generation is by electron beam extrusion, a unique process of the company's CHARACTRON® tube.

With the shutterless DatagraphiX Universal Camera as a standard part of the 4200, output can be printed interchangeably on roll film or microfiche, at either 25X or 42X reduction ratios.

At the 42X ratio, a 4-inch by 6-inch microfiche can contain up to 224 frames of data. Sixteen millimeter roll film can be coded with sequential retrieval marks and recorded "one up" with a frame occupying most of the width of the film. Or, the camera can print images "two up" by reducing the image size to 42X and moving the recording lens across the width of the film.

The 4200 also has the ability to superimpose preprinted background forms over the displayed data. This enables business forms to be merged with computer-generated information in a single operation, eliminating the need for preprinted forms.

Pilot installations of the 4200 will be made during the first quarter of 1971.

'Scare Crow'

'Snakes' Tried As Pigeon Cure

Ever since Eden they've had a bad name. Instrumental in banning Adam and Eve from the garden, the "snake" is now playing a major role of ridding pigeons from the DC-10 production area at Convair Aerospace in San Diego.

Convair had been experiencing a number of discrepancy reports on DC-10 skin quality, because of pigeon waste on the aluminum fuselage skins.

Jess Cook, head of the EZ Duzit program, appealed to employes for ideas to eliminate the problem **(GD/NEWS, May 27, 1970)**. "The response was overwhelming," he said. "Among the suggestions were use of stuffed owls, gun fire recordings, high frequency sound, flashing lights, and toy snakes."

The snake idea was adopted on a trial basis and the rubber vipers were placed in strategic areas in Bldg. 3. Although many employes submitted the idea, credit goes to the first suggestors, Karen Rose of personnel and Gordon Olcott of production control tool stores, for simultaneous submission.

Karen read about a similar problem at Scripps hospital. Investigating, she found they had solved it by using toy snakes.

SNAKY IDEA — Karen Rose, right, of personnel and Gordon Olcott of protection control tool stores, "toy" with rubber snakes installed in Bldg. 3 at LF to scare pigeons.

However, she did learn that just any snake won't do. Correspondence from a hospital in Hawaii read, "Hawaiian snakes don't seem to work. Please send the San Diego variety."

Olcott also learned about the "cure" from Scripps. He had visited the hospital and seen the reptiles in action. He watched pigeons fly near the building and veer away.

Evaluation of the effectiveness of the snakes is expected to be completed by early next year and ES awards made at that time.

Convair Son, 19 Cited as 'Hero'

The 19-year-old son of two Convair employes has been cited by Police Chief O. J. Roed of San Diego for heroism in saving the life of an elderly woman who had been overcome by smoke in a burning apartment.

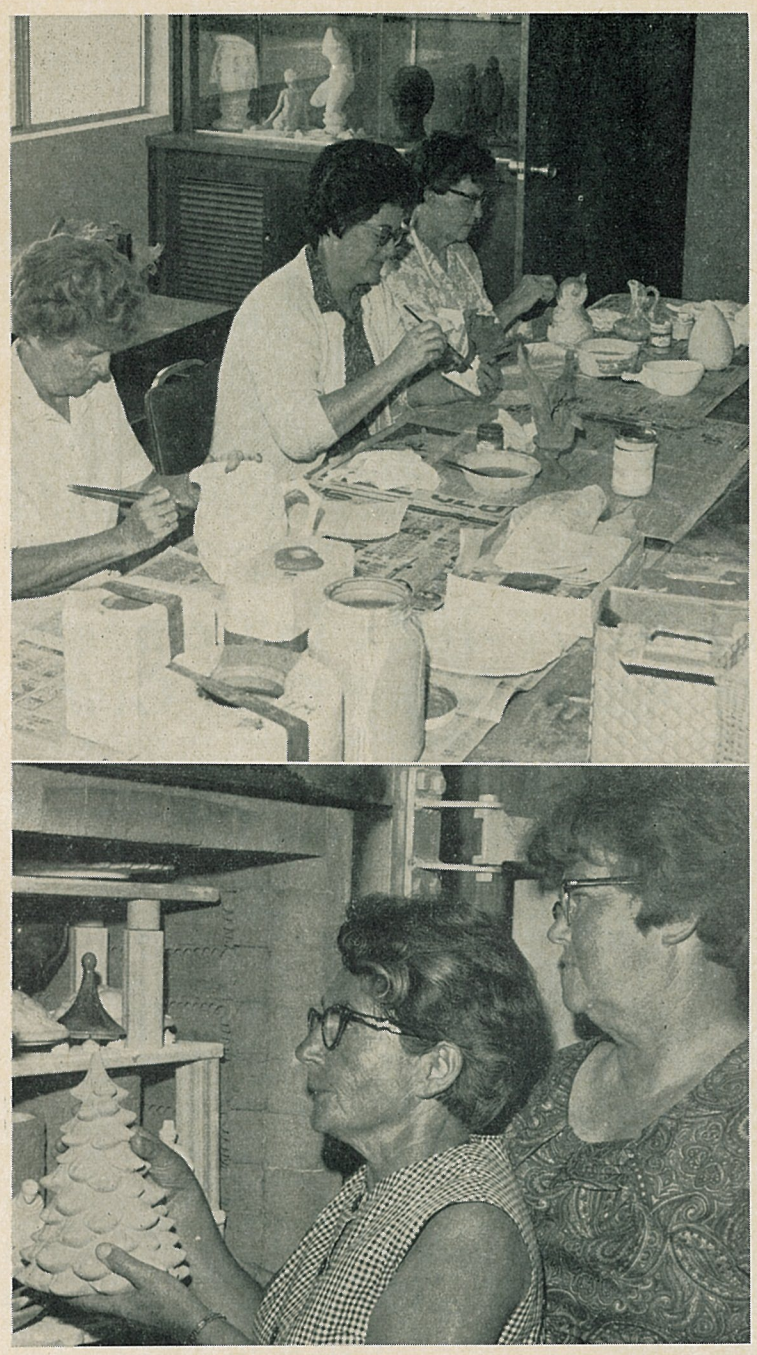
William Mohrlock, son of Hugo Mohrlock, new-technology utilization specialist in Dept. 103-0, and Jean M. Mohrlock, a steno-secretary in Dept. 585-0, was going home from a night service station job when he became aware of an upstairs fire in a Clairemont apartment building about 11:45 p.m. Sept. 8.

He and a police officer, who had smelled smoke and radioed an alarm, broke open a door and found the room filled with smoke and flames.

Young Mohrlock, now a Mesa College student, crawled into the smoke-filled room, found the 82-year-old resident semi-conscious on the floor, and pulled her to safety.

Roed, in a letter of commendation, said: "Since so much is heard of public indifference and of people not wanting to get involved in something that may be dangerous or unpleasant, it is gratifying to hear of someone taking affirmative action such as you did to assist a fellow citizen and the Police Department . . . Please accept my thanks for your heroic assistance."

Mohrlock received a $25 reward from the apartment house owner.



CRA CERAMICISTS—Preparing ceramic items during one of twice-weekly morning sessions for CRA Ceramics Club members, from left in top photo, are Mary Horning, Florence Porter, and Helen Morgan. In lower photo, Winn Callard places "Christmas tree" in club's large kiln for glazing as Margaret Hottell looks on.

Boogaloos Outplay Cosmo Bums For Fast-Pitch Softball Crown

The Boogaloos beat the Cosmo Bums, 4 to 2, in the final game to win the perpetual championship trophy in the CRA fast-pitch plant softball league with a 10-2 season record.

Ross Warfel, Boogaloos pitcher, hit a third inning home run to set the stage for the "pennant win."

Eugene Gray, Boogaloos captain and left fielder, made a spectacular catch of a ball hit by his brother, Clint, in the seventh inning and Van Jackson, Cosmo Bums pitcher, walked in Bruce Fowler with the bases loaded to give the Boogaloos the crown.

Shelly White of Dept. 250-1, manager and utility player for the Boogaloos in their third season of play, credited good all round performance with giving the team its first championship.

Frankie Mafnas, the team's regular shortstop, gave up only three hits in three games he pitched — and had a no-hitter going for six innings in one.

Gray started the season at second base and never missed a game although he suffered a head injury that required 15 stitches early in the season. He was accidentally kicked in the head while fielding a bunt down the first base line. Bruce Fowler also played all games despite injuries.

Runner-up teams in the fast-pitch league were the Cosmo Bums, the Charlie Browns, and the Beautiful Painters.

Other members of the championship Boogaloos team were Joe Terramagra, Gilbert Petzen, Lou Rossi, Rick Ahlgren, Ray Coulter, Grady Tryon, John Durcan, Ruben Huerta, Loren Roark, and Herb Gallaway.

Convair Assembler Lands 150-lb. Shark

James Eckert, a missile assembler in Convair's Dept. 761-0, landed a 150-pound bonito shark with a No. 2 hook, strip bait, and a 30-pound-test line after a 45-minute battle at the La Jolla kelp beds Sept. 16.

"He put up a good fight," Eckert said later. "He had already broken lines of two other fishermen. Everyone was really surprised that my line held."

Eckert was fishing off a sportfishing boat from Seaforth Landing when the seven-foot shark took his line and the battle began.

"He came all the way out of the water several times," Eckert said. "It took four guys to gaff him after I got him up to the boat."

Eckert is having the shark's head and skin repaired and mounted by a taxidermist to decorate a wall at his home. Each crew member aboard the boat took home a big shark steak from the catch.

In addition to the shark, Eckert boated two small yellowtail on the outing.

Last spring he caught a blue shark while fishing off the Coronado Islands after a running two-hour tug-of-war but it was not boated because of its potential danger to those aboard the boat.

Black, Schneider Win Pistol Shoot

Harry Black and Red Schneider, with only one point separating their final scores, took master class honors in the CRA Pistol Club's .22-calibre competition Sept. 13 on the San Diego police range.

Leading the expert class were Charley Kropp, first, and Leon Thomas, second. Thomas' son, Jim, 15, took first in the sharpshooter division for the second consecutive time.

Jerry Lehrer and Charley Kropp were high scorers on the .45-caliber short national course.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 KM. Deadline for next issue of GD/NEWS is Oct. 6. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS — Tag-a-long desert trip, Oct. 3-4. San Jacinto backpack, Oct. 24-25.

BADMINTON—Play 7-10 p.m., Mondays, Federal Bldg., Balboa Park.

BONAIR FLIERS — Meet 7:30 p.m., Oct. 1.

BRIDGE — Duplicate bridge sessions, 7:30 p.m. each Friday.

CERAMICS — Meet 9 a.m.-noon and 7-10 p.m., Tuesdays and Thursdays.

CHESS—Play 7 p.m., Oct. 7.

CHORUS—Rehearsals 7:30 p.m. each Monday.

COINEERS—Meet 7:30 p.m., Oct. 12.

COUNTRY & WESTERN MUSIC — Meet 7:30 p.m. each Thursday.

FENCING — Workouts and instruction 7:30-10:30 p.m., Fridays. YWCA, 10th & C Sts.

GARDEN CLUB—Meeting 7:30 p.m., Oct. 7, Floral Association Bldg., Balboa Park.

GOLF—Los Penasquitos tourney, Oct. 17-18.

HEALTH CLUB—Open 9:30 a.m.-10 p.m., Monday through Thursday; 9:30 a.m.-9 p.m., Fridays; 10 a.m.-5 p.m., Saturdays; "women only" weekdays, 9:30-11 a.m.

HI-FI MUSIC—Meet 7:30 p.m., Oct. 13.

ICE SKATING—GD family skate night 6:15-7:45 p.m. each Thursday, House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1 (includes skates).

JUNIOR SCIENCE—Meeting 7:30 p.m., Oct. 2

MINIATURE RAILROAD — Operating sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions 7 p.m. each Wednesday, CRA Missile Park.

PISTOL CLUB—Club shoot 9:15 a.m., Oct. 11, San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB—Meeting 7:30 p.m., Oct. 1.

RIFLE CLUB—Senior shoot 7 p.m., Oct. 14. Junior shoot 9 a.m., Oct. 3. Gillespie Field Range.

ROCKHOUNDS — Meeting 7:30 p.m., Oct. 14.

SCULPTURE—Workshop sessions 7:30-10:30 p.m., Mondays.

SKI CLUB—Meeting 8 p.m., Oct. 6, South Bay Club.

SPORTS CAR CLUB — Meeting 7:30 p.m., Oct. 14.

SQUARE DANCE — Dance 8-10 p.m. each Thursday.

STAMP CLUB — Meeting 7:30 p.m., Oct. 8.

SWIMMING — GD family swim night 7-9 p.m., Oct 17, Mission Beach Plunge. Tickets at employe benefits, 5 cents.

TABLE TENNIS—Friday night league 7:30 p.m. Play Saturdays, 10 a.m.-4 p.m.

TENNIS—Fall tourney Saturdays and Sundays, Oct. 3 through Oct. 17, at Mesa College.

TOASTMASTERS — Convair Toastmasters meet 4:30 p.m. each Wednesday. Dynamic Toastmasters meet 5:30 p.m. Thursdays.

TRAILBIKE—Meeting 7:30 p.m., Oct. 8.

TRAILERS—Meet 7:30 p.m., Oct. 6.

WOMEN'S GOLF—Balboa tourney, Oct. 10, tee-off time 9:59 a.m.

Tennis Tourney Starts Saturday

CRA and Convair Management Assn. have announced plans for a fall tennis tournament beginning Saturday (Oct. 3), with competition Saturdays and Sundays through Oct. 17 on Mesa College courts.

Scheduled are advanced men's singles, 9 a.m. Oct. 3; novice men's singles, 1 p.m. Oct. 3; advanced men's doubles, 9 a.m. Oct. 4; novice men's doubles, 1 p.m. Oct. 4; intermediate men's singles, 9 a.m. Oct. 10; intermediate men's doubles, 9 a.m. Oct. 11; intermediate women's singles 1 p.m. Oct. 10; novice women's singles, 1 p.m. Oct. 11; and mixed doubles, 10 a.m. Oct. 17.

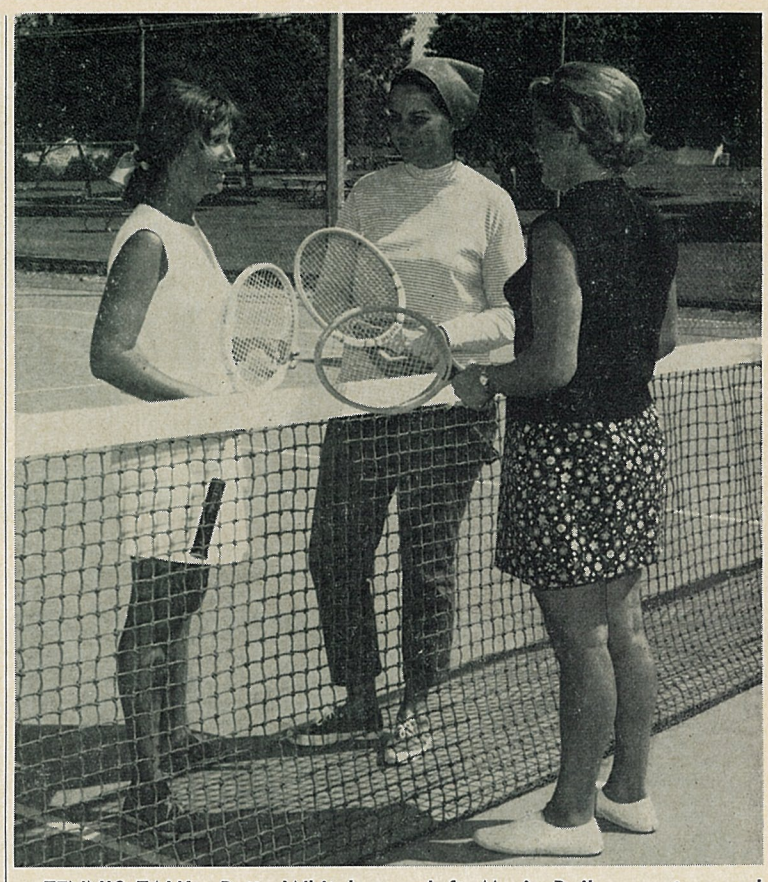
Bob Herold, CRA Tennis Club commissioner, will be chairman. Others on the tournament committee are Cecil Norwood, advanced division, ext. 2821 KM; Milt Kreml, intermediate division, ext. 2811 KM; Manuel Fernandez, novice division, 279-8014; and Connie Bates, women's division, ext. 1771 KM.

Zoofari Privilege Cards Available

Zoofari Privilege discount "ticket-package" cards for General Dynamics family visits to the San Diego Zoo are available at all employe benefits and CRA outlets.

The cards cover entrance to the zoo, a guided bus tour, a Skyfari ride, and admission to the Children's Zoo.

Cost is $2.50 for adults (16 and over), a $1 saving; $1.25 for juniors (12 to 15), a 65-cent saving; and 75 cents for children (2 through 11), a 15-cent saving.



TENNIS TALK—Betty Whitehouse, left, Marie Bailey, center, and Arlene Bennett discuss game over net at CRA. Courts now are lighted for night play.

Ceramicists at SD Get Early Start On Decorations For Holidays

Members of the CRA Ceramics Club already have started turning out colorful and beautifully glazed turkeys, Santa Clauses, and other decorative items from special clays for the Thanksgiving and Christmas holidays. A variety of pitchers, platters, cookie jars, and other serviceable items are going into the club's kilns, too.

The club holds work sessions from 9 a.m. to noon and from 7 to 10 p.m. each Tuesday and Thursday. Since both morning and evening sessions are scheduled the same days, the club kilns can be fired up in the morning and left on all day.

Mary Miller is president, Mary Horning is secretary, Daisy Klauk is treasurer, and Margaret Hottell handles purchasing for the club.

The club has 50 members, each averaging about four hours a month working in the club's workshop in the CRA clubhouse, and there is a waiting list for prospective members. Morning work sessions are usually "all girl affairs."

There are no regular instruction classes being held but a novice can always pick up helpful hints and instructions from others in the group. "We just sort of teach each other," Mrs. Hottell commented.

The club purchases slip (special clay mixed with water, glycerine, and other substances) in large quantities and has a wide selection of molds available for use by members. Other items may be purchased as "greenware" through commercial outlets for finishing.

Ceramic pieces usually are "fired" two or three times in the club's kilns in the finishing process. The club hopes to be able to add an additional kiln and lockers in the near future in order to expand its operations.

Family Voyage Is 'Life Saver'

A Carlsbad, Calif., man is alive because Dick Reyburn, assistant chief design engineer in Convair's Dept. 553-0, and his family decided to take the first long-distance trip in their Coronado 25 sailboat, the Feelin' Groovy.

After spending the Labor Day weekend at Catalina Island's Cherry Cove, the Reyburns were headed back to San Diego under power and sail.

About 12 miles south of Catalina, Reyburn heard a shout and he and the others aboard rescued Charles Piety, 47, who had been in the water in a life jacket since his trimaran and a dinghy capsized the previous day.

"My wife, a nurse, feared for his life before we could get him to the hospital at Avalon," Reyburn recalled. He was delirious and most of the skin on his arms was worn away from buffeting of the life jacket."

Reyburn said his daughters, 15 and 20, and one of their friends aboard "really acted with maturity and coolness" in assisting with the rescue.

After turning back toward Catalina, Reyburn fired a smoke flare to attract the crew of a power boat with a radio who notified the Coast Guard and Avalon Harbor Police. The rescued man later was transferred to a Harbor Police boat for faster return to shore.

Piety's 22-year-old son, Phil, who had been with him aboard the trimaran and dinghy, was lost in the boating mishap. Coast Guard searchers later found his life jacket, the dinghy, and the trimaran all still afloat.

Reyburn said he and his family have been sailing about 10 years but only the last year in ocean-type boats. Purchasing the flare kit with which he attracted the power boat was the last thing he did before sailing for Catalina. Now he's considering outfitting the Feelin' Groovy with a radio.

Ken Eastin's 81 Leads Linksmen

Scores for the Sept. 19-20 CRA links tourney at Meadows Country Club have been announced by Commissioner Terry Kell.

Flight winners:

1st Flight—Ken Eastin, gross 81 and Joe DeGrazier, net 68; 2nd Flight — Pete Williamson, Frank Kany, Will Coffey, gross 84 and Lou Elfers, net 69; 3rd Flight—Gen Velasquez, gross 85 and Carl Leonard, net 71; 4th Flight—Jim Kintzer, Bud Hubel, gross 91 and Jim Kerr, net 71; 5th Flight — Fred Aguero Sr., gross 92 and Mike McNally and Jim Duffy, net 75.

CRA golfers will challenge the Los Penasquitos course Oct. 17-18. Beginning Oct. 7 linksmen can reserve starting times by calling the CRA Clubhouse, ext. 1111 KM.

CAMERA CLUB SEES SLIDES FROM RUSSIA

Slides on life in the Russian cities of Moscow, Kiev, and Leningrad were shown at the CRA Camera Club meeting Sept. 20 by Father James N. Poulsen of Our Lady of Confidence parish.

THEY'LL COMPETE—F-106s will compete in annual "William Tell" weapons competition next month. At left they form deadly line awaiting takeoff for intercept mission. At right pair of ADC F-106s head for overwater firing range near Tyndall AFB, Florida. Center: Falcon missiles are readied for loading.

OCEAN TRAVELERS—Two F-111Es arrived in England this month to join NATO forces. At right is Col. Grant R. Smith, pilot of first plane to arrive. At left is his co-pilot, Lt. Col. Kenneth Blank, shown greeting his wife. At rear is Brig. Gen. Frank Gailer, vice commander, Third Air Force, and Col. G. C. Cleveland, vice commander, 20th TFS. (USAF photos.)

Two F-111s Cross Atlantic to Join NATO Team at RAF Base in England

Two of the Air Force's newest operational tactical jet fighters, the F-111E, joined the NATO team at RAF Upper Heyford, England, this month after completing a non-stop trans-Atlantic flight from Langley AFB, Va.

The two aircraft are the first of a full wing of 72 aircraft to be received by the 20th Tactical Fighter Wing at Upper Heyford as part of an aircraft conversion program announced last fall.

The 79th Tactical Fighter Squadron will be the first of the 20th's three squadrons to be equipped with the supersonic F-111E. Within the next few months, the wing's other two squadrons, the 55th and 77th, will be converted to the new fighter.

Piloting the lead aircraft on the 4,900-mile flight was Col. Grant R. Smith, commander of the 20th. Maj. Norman J. Thouvenelle commanded the second aircraft.

The two aircraft touched down precisely on schedule, with Col. Smith landing first. Arriving in the rain, the aircraft penetrated a layer of clouds extending up to 20,000 feet to get into Upper Heyford.

Crewmen said the flight had gone smoothly and lauded the aircraft's navigation system. "We hit our destination on the button," one crewman said.

Air Force personnel at Upper Heyford were outspoken in their eagerness to get the F-111Es into operation.

Extensive preparation had been made for arrival of the aircraft. This included a massive influx of personnel, conversion or construction of a number of facilities, and extensive training for both air and ground crews.

A new engine maintenance shop which was opened Jan. 30 is described as "one of the most modern of its kind in Europe."

Field Training Detachment 916S has been training pilots and ground crew members since becoming fully equipped and staffed earlier this year. The training was described as "outstanding, enabling the number of highly trained personnel on base to accelerate the operational readiness program."

Upper Heyford was an RAF training base during both World Wars I and II, even though bombing sorties were flown from the base during the latter period.

The U. S. Air Force arrived at the base in 1951, with Strategic Air Command's 7509th air base squadron. During the following years, SAC B-29s, B-47s, B-50s and B-52s served on strategic deterrent missions.

FB-111 to Make Debut Next Month In Annual SAC Bombing Competition

The FB-111 will make its debut in Strategic Air Command's combat competition this year.

Two FB-111s from the 340th Bomb Group will compete with B-52s, KC-135s and Royal Air Force Vulcans for bombing and navigation awards at McCoy AFB, Orlando, Fla., Nov. 15-20.

Two additional bombers from the 340th will be placed on static display at the base during competition.

Each bomber crew will fly two scored missions, which will encompass pinpoint navigation, coupled with simulated bombing from both high and low altitude.

Tanker crews will fly one mission and compete for navigation honors. The combined total of bombing and navigation points accumulated by a bomber and tanker unit will determine the winner of the coveted Fairchild trophy. The Saunders trophy will be awarded to the tanker unit scoring the most points in navigation.

In addition to the Fairchild and Saunders trophies, the Air Force Association will sponsor a new trophy this year to be awarded the top bomber unit based on combined points in bombing and navigation.

All bombing done during the competition is by transmission of a radar-scored electronic impulse called a "bomb tone," rather than the dropping of actual bombs.

About 55 SAC aircraft crews and three Royal Air Force Vulcan bomber crews will take part.

Masters Degrees Conferred by SMU

Five recently received master of science degree from Southern Methodist University recently.

Receiving advanced degrees in electrical engineering were Morgan Defenderfer, Dept. 62-6; Richard T. Hager, 64-3; Gene L. Jackson, 62-6; and James F. Keathley, 62-6.

Jerry D. Kennedy, Dept. 64-8, received a degree in mechanical engineering.

Mueller Scheduled To Address Club

Dr. George Mueller, General Dynamics senior vice president to whom the new Convair Aerospace and Electro Dynamic divisions report, will be guest speaker at a Convair Management Association meeting Oct. 28 in San Diego.

The meeting will be held in the California room in the new convention center at Town and Country Hotel in Mission Valley. The subject for Dr. Mueller's address had not been announced.

F-102s, F-106s to Compete In 'Apple Shoot' Over Gulf

Shooting an apple off his son's head was a challenge for legendary Swiss hero William Tell. But fighter-interceptor teams with Convair-built F-102s and F-106s will be knocking "apples" that maneuver at 600-mph out of the sky next month over the Gulf of Mexico in William Tell-1970 fashion.

Convair people, planes, and exhibits all will have key roles in the William Tell 1970 interceptor weapons meet and related activities to be sponsored by the Air Defense Command Oct. 26-31 at Tyndall AFB, Fla.

The Convair F-102 Delta Daggers and F-106 Delta Darts from six squadrons will be competing for team honors in knocking down elusive "invader aircraft," actually Ryan Firebee drones that can fly more than 600-mph at up to 50,000 feet for more than an hour.

F-102s and F-106s, along with F-100 Voodoos, will serve as "bows" for the competition. The "arrows" will be air-to-air missiles and rockets.

After a five-year break in the weapons meet, William Tell 1970 will demonstrate the aerospace defense capability against manned bombers, still a major threat to the nation's security.

Each of the nine participating units were selected through earlier intercept-mission competitions. Unlike some previous worldwide meets, the 1970 version of William Tell will not produce an overall meet winner — but will designate winners in each of the three aircraft categories.

Competing in the F-106, workhorse of the ADC for the past 10 years, will be teams of four aircraft each from the 318th Fighter-Interceptor Squadron (FIS) at McChord AFB, Wash.; the 84th FIS at Hamilton AFB, Calif.; and the 71st FIS at Malmstrom AFB, Mont.

Flying the F-102s, now used by U.S. Air National Guard units with aerospace defense duties, will be the 124th Fighter Group (FG) at Gowen ANG Base, Boise, Idaho; the 148th FG at Duluth International Airport, Minn.; and the 142nd FG at Portland, Ore.

Competition in F-100s will be between the Canadian 409 All Weather Squadron from Comox Canadian Forces Base, British Columbia; ADC's 60th Fighter-Interceptor Squadron from Otis AFB, Mass.; and the ANG's 119th Fighter Group from Hector Field, N.D.

Lyman Josephs, Convair Aerospace division vice president and general manager, will award delta-shape trophies to first and second-place winners in the F-102 and F-106 categories at an awards presentation and open house Oct. 31.

Others attending from Convair will include W. W. Fox, director of interceptor programs and A-X program manager; C. S. Brandt, F-102/F-106 program manager; B. F. Ferguson, F-102/F-106 deputy program manager; Joe Basquez, assistant marketing manager-military programs; and R. E. Sommers, chief of customer service.

A combined Convair-Air Defense Weapons Center exhibit will feature the Gatling gun-mounted "Six Shooter" aircraft; a motion picture of the gun installation development, including sequences of ground and airborne firings where towed targets and guided missile targets were destroyed; and an animated M61A1 Gatling gun system.

Winners' trophies and a "champions' corner" montage of pictures and a listing of all previous William Tell F-102 and F-106 participants also will be exhibited.

Ferguson said the 318th FIS from McChord AFB, which will be competing this year in the F-106 category, won the 1963 William Tell meet and was the first squadron dispatched to the Republic of Korea after seizure of the USS Pueblo in 1968.

The 71st FIS from Malstrom AFB was in Korea at the time a Navy ED-121 reconnaissance aircraft was shot down by the North Koreans and the unit's F-106s flew air defense cover for later reconnaissance flights in that area.

F-106s from the 84th FIS at Hamilton AFB have been on duty several times in Alaska to stand "alert" against Soviet long-range aircraft that fly close to the Alaskan coast to probe U.S. defenses there. ADC aircraft under the Alaskan Air Command are sent aloft to intercept such flights.

Project William Tell began in 1954 as an air-to-air rocketry phase of the third annual USAF fighter gunnery and weapons meet at Vincent AFB, Ariz. It was moved to Tyndall AFB and given a new name—the USAF Worldwide Fighter-Interceptor Weapons Meet — after the 1956 biannual competition.

The 1961 meet was the first "all-Century-series" event with F-102, F-106, and F-101 aircraft entered and the semi-automatic ground environment (SAGE) system used for detecting targets and guiding interceptors to the kill.

The overwater firing range near Tyndall AFB, embracing hundreds of square miles of open water extending into the Gulf of Mexico, is considered ideal because the supersonic speed of the aircraft and range of their missiles require an ample safety margin to protect public property and shipping.

Lt. Gen. Thomas K. McGehee, commander of the ADC, says the William Tell competition is the most realistic testing environment possible for North America's air defenses against potential enemy bombers or other aircraft.

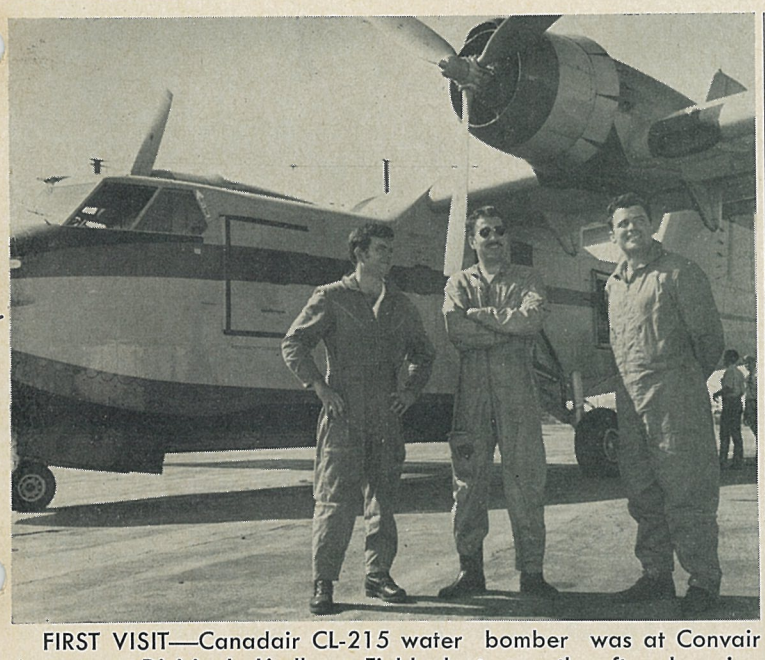
"Regardless of its outcome, in terms of point standings and awards made, our personnel will have benefited," he said. "If the results of William Tell 1970 meet our expectations, the American public will feel a little more secure because of our demonstrated defensive capability against the manned bomber threat currently posed by the Soviet Union."

When telephoning, never mind the weather. Get to the point. Telephone time costs money.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 23, No. 19 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, October 14, 1970



FIRST VISIT—Canadair CL-215 water bomber was at Convair Aerospace Division's Lindberg Field plant recently after dropping ocean water on Malibu fire in Los Angeles area. From left are Doug Adkins, pilot; Yves Mahout, co-pilot, and Joe Basquez, Convair Aerospace assistant marketing manager-military programs.

CL-215 Water Bomber Helps in Fire Crisis

The 19th CL-215 water bomber to come off the production line at Canadair Ltd. was diverted to Idaho and Southern California last month from the Cleveland Air Show to assist in fighting some of the most destructive forest fires in the nation's history.

Doug Adkins, project pilot since the first CL-215 made its maiden flight in 1967, said the CL-215 dropped 100,800 gallons of ocean water in 70 passes over the Malibu fire in the Los Angeles area. Yves Mahout was co-pilot.

The million-dollar CL-215, only aircraft ever designed for forest fire control, made round trips from the ocean off Coral Beach to the fire perimeter in seven to nine minutes—compared to about 30 minute turn-around time for land-based bombers carrying fire retardant chemicals that required filling by hose.

A six-ton load of water is picked up by the CL-215 in a 15-second run on an ocean, sea, or lake through two five - inch - diameter probes behind the seaplane's hull step.

Water pickup has been made in the Mediterranean Sea in tests for the French government under choppy sea conditions with six-foot waves.

Many Convair Aerospace and Electro Dynamic personnel in San Diego got a close-up look at the CL-215 for the first time while it was at Lindbergh Field Sept. 29 through Oct. 1.

The Division of Forestry was offered services of the aircraft and crew without charge to assist with final control of fires in the San Diego area.

Adkins had hoped the CL-215 would be authorized to scoop water from El Capitan or one of the other county reservoirs for use in bombing "hot spots" on the fire lines. One demonstration pick-up and drop was made on San Diego bay as the plane landed at Lindbergh Field.

The CL-215 moved north Oct. 2 to Hemet to carry fire retardant chemicals from an airport there to fires in the San Bernardino mountains.

Adkins said arrangements for diverting the CL-215 to the West Coast were made by Canadair Ltd. officials at the request of Roger Lewis, General Dynamics president. With the aircraft, in addition to the pilot and co-pilot, were Philippe Louis, a mechanic, and Stan Newlove, a quality control inspector.

The CL-215 cruises at 160 knots and can transport 19 passengers or 6,800 pounds of cargo. It can drop an "instant half-inch rain" on a fire "hot spot" or spread

(Continued on Page 2)

Barbara Reed Is 'Miss Torch'

Firemen from Convair Aerospace Division's San Diego plants selected Barbara Reed, a 32-year-old steno-secretary in the F-111 program office (Dept. 053-0) at Kearny Mesa to represent the division as "Miss Torch" in the San Diego Fire Prevention Week parade Oct. 4.

Mrs. Reed, a flaming redhead and a four-year division employe, and two other contestants, Diana Moore of Dept. 130-3 and Susan Snyder of Dept. 053-0, rode on a crash truck with representatives from the division fire department.

The parade went on as scheduled under overcast skies and during a break between sprinkles.

(Continued on Page 2)

MISS TORCH—Barbara Reed, chosen Miss Torch by Convair Aerospace-SD firemen, receives trophy from S. R. Sharp, manager of industrial security.

CANYON CRISIS — CL-215 drops six tons of water on canyon in Malibu-Topanga area near Los Angeles. Round-trips for refill took seven minutes.

Wes Magnuson In NMA Race

W. E. "Wes" Magnuson, chairman of Convair Aerospace-SD's Craftsmanship program and a veteran of 30 years with General Dynamics and predecessor firms, has been nominated for presidency of the 90,000-member National Management Association.

Wes Magnuson

The election, in which only directors will vote, will be held in conjunction with the NMA annual meeting Oct. 18-20 in Chicago.

Convair Management Association will be receiving two national awards at the meeting—a second-place award for outstanding club in its class (more than 500 members) and a third-place award as "club of the year."

Representing the association at the meeting, in addition to Magnuson, will be H. B. Day, president; J. E. Cook, chairman of the board of directors; C. B. Simmons, executive vice president; Art Medrano, financial secretary; G. E. Nuss, recording secretary; and T. W. Ochodnicky, treasurer. Simmons will serve as Magnuson's campaign chairman.

Currently an NMA vice president, Magnuson also has been active in that organization 30 years. He was national secretary-treasurer in 1953-54, has been a national director the last two years, and served as president of the former Convair Astronautics Management Club in 1961-62.

He was honored as Convair Management Club's "Man of the Year" for 1968.

Aerospace Museum Directors Named

James H. Mason, director of communication for Convair Aerospace division, has been appointed a director of the Aerospace Hall of Fame, which has exhibits honoring outstanding contributors to aviation and space programs in the San Diego Aerospace Museum in Balboa Park.

Directors of the Aerospace Museum include W. F. Chana of Convair Aerospace Dept. 102-0 and H. Cushman Dow, Convair Aerospace-SD legal counsel.

More F-111 'Hardware' On Order From SD

Convair Aerospace-SD has received authorization for production of an additional 24 ship sets of "hardware" for F-111 F-series aircraft from the F-111 program office in Fort Worth.

W. S. Stroud, manager of the F-111 support program in San Diego, said deliveries are scheduled from mid-1971 through early 1972.

Included will be fabrication of stabilization booms, fixed pylons, pivot pylons, forward electronics bays, 600 - gallon external fuel tanks, aft-center fuselage sections, spike assemblies, fixed-cowl assemblies with blow - in doors, ram panels, and fiberglass side panels.

Authorization for the follow-on production followed an Air Force announcement that it had obligated an additional $142,814,000 toward purchase of additional F-111Fs from General Dynamics.

The obligated funds are part of a $177,814,000 definitive, fixed-price incentive contract issued earlier. The other $35 million was obligated previously.

Stroud said the 24 additional planes will bring total number of F-111Fs to 85 and total orders for F-111 aircraft to 535.

Frank W. Davis, Convair Aerospace Division president, said the new allocation will provide aircraft to complete the Fourth Tactical Air Command Wing of F-111s and thus adds considerably to national defense.

It is the first order for F-111s beyond the original production contract.

"While the contract itself does not alter our manpower predictions for the Fort Worth operation (these predictions assumed that the F-111F contract would be awarded), it does encourage us in our efforts to extend F-111 production beyond mid 1972," Davis said.

"Air Force requirements for additional F-111s have not changed. Budget restraints alone have stood in the way of meeting the Air Force's stated requirements for more F-111 fighter-bombers and more FB-111 strategic bombers."

'Weekend at Sea World' Offered at Bargain

Sea World, San Diego's 70-acre aquatic entertainment center with show performers ranging from killer whales and elephant seals to beautiful sea maids and roller skating penguins, has scheduled a special "General Dynamics weekend" Oct. 24 and 25.

Reduced-price tickets are on sale at all Convair Aerospace, Electro Dynamic, and DatagraphiX employe benefits and recreation offices in San Diego, El Cajon, and Pomona.

Tickets will be good either day and are $2.50 for adults (a $4.10 value), $1.25 for juniors 13-17 (a $3.10 value), and $1.25 for children 5-12 (a $1.60 value). Children under five are free. The park is open from 10 a.m. to dusk.

Each ticket will cover admission, all marine-life shows and exhibits, and the individual's choice of a ride on the 320-foot skytower, the eight-minute skyride between Sea World and the Atlantis restaurant, the 28-passenger hydrofoil boats, or the new Shamu kiddie ride.

Sea World's popular dolphin lagoon show has a new theme of pirates and hidden treasures with a cast of high-jumping dolphins, a chimpanzee who sails as Black Beard, and a dolphin trainer playing the part of a shipwrecked sailor.

Shamu, weighing in at two tons and the world's first trained killer whale, undergoes a "medical inspection" in each of the shows in which she stars, takes her trainer for a thundering ride around her tank, and climaxes her performance with a 22-foot leap that sends a cascading wall of water on to onlookers who venture too close. Three other whales —Ramu, Kilroy, and Kandu—are called in if Shamu is off for a "beauty rest."

A computerized light and water show in an indoor theatre seating 800, an underwater ballet with dolphins and sea maids, a seal and penguin show, and pearl diving exhibitions are other major attractions at Sea World.

New additions installed in the aquatic park at a cost of $300,000 this year include a walk-through

(Continued on Page 2)

DELIGHTFUL DISH—Elaine Naylor, second-shift keypunch operator in Convair Aerospace-SD's Dept. 101-6, provides tasty morsel for dolphin Sandy as companion Cindy waits at Sea World in San Diego. Elaine says dolphins and Blue Beard, a companion chimp who sails their seas, are all set to entertain at "General Dynamics weekend" Oct. 24 and 25.

THIRTY-FIVE YEARS—Willard H. Fink, right, design draftsman, receives service tie bar from L. C. Josephs, Convair Aerospace vice president and general manager at San Diego. Fink, a second generation Convair man, joined Consolidated "temporarily" in sheet metal area in 1935.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Oct. 1 and Oct. 15.

THIRTY - FIVE - YEAR: Dept. 031, Burkley A. Clemmens; 046, Edward D. Robinson; 143, Milton C. Nesbit; 967, Arthur C. Thurber.

THIRTY-YEAR: Dept. 001, O. M. Hamman; 015, H. A. Wilson; 019, P. A. Pacheco; 031, J. Wasem; 046, W. Levandowski; 140, L. A. Denoyer, P. H. Whitlock; 148, R. R. Lyman; 149, R. D. Johnson, A. L. Spears; 170, B. V. Allen; 204, J. L. Beeson; 210, J. S. Bergstrom; 250, M. I. Smith; 532, R. L. Trussell; 561, J. J. Wheeler Jr.; 597, W. A. Floyd; 761, R. L. Long; 860, S. Freedman; 958, A. W. Wiest; 985, J. W. Galyen.

TWENTY-FIVE-YEAR: Dept. 001, T. A. Edwards; 130, C. F. McMenamy; 149, O. E. Ream; 205, A. W. Peters; 401, J. C. Beltran, W. L. Pritt; 515, D. Z. Stewardson.

TWENTY-YEAR: Dept. 015, F. J. Stefance; 019, Lela Y. Spahr; 031, A. Ramirez, J. W. Reynolds, I. F. Stiles; 143, C. D. Stephens; 195, D. L. Tennesen; 223, 227, R. H. Ford; 250, Elizabeth P. Keeling, R. D. Leonard; 401, C. V. Core, M. Freeman; 420, J. H. McDonald, J. W. Woodhouse; 507, R. B. Bucaro, G. C. Cooper; 545, P. F. Goforth, J. G. Howerton; 553, N. M. Antonioli, L .M. Goldberg; 566, J. V. Zenari; 780, E. J. Antus; 810, M. K. DeBont; 985, J. F. Counts.

FIFTEEN-YEAR: Dept. 002, Dorothy G. Henley; 015, E. O. Lapanne; 110, W. D. Bowne; 142, D. R. Mabery; 143, H. L. Stouse; 170, B. E. Jackson; 195, R. L. Creamer, Elaine A. Whisman; 205, K. N. Smith; 227, Rilla A. Montgomery; 250, C. A. August, J. Zorman; 420, Thelma J. Colvin; 507, J. B. Gardner; 508, R. C. Dufresne; 511, A. D. McFarian; 518, A. L. Toon; 524, Bernace S. Colburn, Opal Davis; 545, L. R. Hixon; 579, G. L. Herstein; 759, V. Tocco; 840, Eula M. Wiltgen; 963, L. R. Schultek; 988, T. Shimizu; 999, W. E. Rice.

TEN-YEAR: Dept. 027, P. L. Kuentzel; 046, Lavada W. Castile, O. P. Gunderson, Maria H. Vargas; 100, H. H. Peyer; 101, Shirley J. Liles, C. L. Moriyama, S. G. Paris; 131, J. E. Fowles; 193, A. Honrud; 194, S. E. Herbst Jr.; 195, L. R. Chapman, J. D. Webber; 204, Arlene M. Oliver; 22, R. L. Hobcomb; 250, T. J. Fowler, Joyce A. Posytan, Seraphine Reis; 400, T. R. Devin Jr.; 420, Frances E. Adkisson, Mary S. Davies; 509, F. E. Huggin; 524, Irma Moreno; 754, R. D. Beneventi; 759, F. C. Cheek; 810, R. M. Ramsey; 953, R. Dekkers; 954, C. D. Westling; 979, R. F. Austin, J. T. Rickling; 986, Virginia M. Williams.

ELECTRO DYNAMIC

FIFTEEN-YEAR: Dept. 102, V. W. Finley; 427, W. C. Eastin; 614, V. R. Hampsten, P. L. Mathewson; 811, Ruth A. Hayward.

TEN-YEAR: Dept. 107, Helen Lynch; 421, G. G. Prentice; 924, R. K. Pierce.

Awards

CONVAIR

Employe Suggestion awards approved for week ending Sept. 25:

G. E. Andrick, Dept. 250-1, $7.50; L. E. Campbell Jr., 144-1, $15; R. Chavez, 810-1, $15; E. B. Chenault, 250-1, $37; D. B. Courtois, 840-1, $101.30; W. W. Dover, 250-1, $7.50; E. F. Dykstra, 744-0, $28.70; M. C. Escareno, 250-5, $15; W. J. Fellows, 046-0, $34.80; M. E. Gallagher, 149-0, $15; L. V. Harrison, 810-0, $15; M. D. Herndon, 001-0, $15; H. P. Higdon, 734-1, $15; R. L. Holley, 840-3, $15; J. C. Hopkins, 454-0, $43.50; G. J. Kadlec, 979-2, $15; M. M. Lopez, 045-0, $15; J. B. Lowell, 143-1, $30.

Also C. J. Malesko, 250-5, $15; W. H. McIntosh, 595-5, $25; E. H. Minder, 250-2, $15; S. W. Mopps, 512-3, $200.60; T. W. Myers, 780-1, $15; A. J. Nybo, 518-0, $52.70; H. E. O'Neil, 250-1, $25; C. L. Parker, 149-8, $140.80; A. C. Rath, 802-0, $33.30; R. E. Reynolds, 842-0, $292.70; D. G. Rice, 144-1, $15; C. M. Richards, 101-6, $55.30; J. D. Rogers, 222-2, $29.30; L. D. Rush, 046-0, $19.30; J. W. Slattery, 553-1, $1,095; W. F. Strasburg, 518-0, $52.70; J. H. Stromberg, 810-0, $198.80; S. Teggart, 140-2, $29; E. L. Vogt, 842-0, $78.50; J. W. Waller, 144-1, $15; C. L. Willey, 420-4, $15.

Employe Suggestion awards approved for week ending Oct. 2:

A. A. Astala, 149-7, $63.40; R. D. Bryan, 046-0, $39; R. Clark, 518-0, $7.50; K. J. Croft, 250-2, $64.50; R. M. Darling, 149-5, $15; J. G. DeLara Jr., 027-0, $15.70; A. F. DiJoseph, 518-0, $7.50; F. O. Edwards, 143-5, $19.90; W. A. Engelke, 250-3, $30; D. A. Falls, 149-7, $59.20; H. M. Gallant, 148-2, $20; G. A. Gibbons, 144-1, $15; P. W. Heasley, 979-1, $15; M. M. Henry, 143-4, $15; V. F. Hirsch, 143-1, $15; V. M. Kilcoyne, 193-2, $23.70; R. J. King, 027-0, $15; R. D. Krebs, 518-0, $15.

Also W. W. Lacy, 149-3, $54.55; J. J. Letzring, 860-0, $44.70; D. G. Longbottom, 143-3, $15; F. Malcangio, 019-0, $20.30; K. McCafferty, 149-7, $84; E. McLeod, 148-2, $15; J. S. Patterson, 149-3, $54.55; I. J. Romero, 142-1, $15; M. H. Scott Jr., 951-6, $220.30; E. S. Slovacek Jr., 027-0, $38.90; F. H. Stine, 027-0, $15; G. Tompkins, 518-0, $15; A. O. Weinberg, 979-1, $15; J. W. Weisman, 001-0, $63.40; K. C. White, 979-1, $96.60; W. K. White, 553-1, $15; R. D. Williams, 149-7, $127.10.

Retirements

CONVAIR

BALDWIN—Ernest R., Dept. 460. Seniority date Oct. 6, 1949, retired Sept. 30.

BARNES—James W., Dept. 570-1. Seniority date Aug. 4, 1961, retired Sept. 18.

BOUGHER — Alvin E., Dept. 001-0. Seniority date Oct. 27, 1950, retired Sept. 11.

BUDZ—Frank, Dept. 780-5. Seniority date March 12, 1947, retired Sept. 30.

BURKE—Dora B., Dept. 524-1. Seniority date Aug. 2, 1948, retired Sept. 30.

BUTCHART—Harold G., Dept. 407-0. Seniority date Jan. 28, 1965, retired Sept. 14.

CANNON—Charlotte R., Dept. 170-8. Seniority date Oct. 2, 1958, retired Sept. 30.

COOPER—Margaret S., Dept. 985-3. Seniority date Aug. 17, 1959, retired Aug. 31.

CRAMER—John J., Dept. 460-0. Seniority date Aug. 5, 1957, retired Sept. 30.

CRUMM—Mack W., Dept. 250-1. Seniority date June 1, 1955, retired Sept. 25.

EDMUNDS — Oscar N., Dept. 148-2. Seniority date Sept. 19, 1956, retired Sept. 30.

ENGLE—Martha M., Dept. 110-1. Seniority date Aug. 13, 1956, retired Sept. 19.

FERRIN—Ezra W., Dept. 019-0. Seniority date Sept. 18, 1946, retired Sept. 30.

JOHNSON—Charles E., Dept. 985-1. Seniority date April 3, 1958, retired July 16.

KELLER—William, Dept. 015-0. Seniority date Sept. 8, 1965, retired Sept. 30.

KRAUSIE — Charles E., Dept. 223-3. Seniority date Nov. 1, 1956, retired Sept. 11.

LANGE—Edmund C., Dept. 985-1. Seniority date Sept. 8, 1959, retired Aug. 30.

LERO—Henry E., Dept. 250-5. Seniority date July 6, 1953, retired Sept. 30.

L'ETOURNEAU—John F., Dept. 059-4. Seniority date Nov. 27, 1941, retired Sept. 30.

MONTGOMERY — Nellie P., Dept. 780-3. Seniority date June 7, 1956, retired Sept. 30.

NIEMET—Leo., Dept. 002-0. Seniority date March 5, 1928, retired Sept. 20.

PALMER—Robert B., Dept. 529-1. Seniority date Sept 9, 1963, retired Sept. 30.

PHILLIPS—Cecil R., Dept. 451-0. Seniority date Aug. 22, 1935, retired Sept. 4.

RICHEY — Kenneth W., Dept. 002-0. Seniority date July 15, 1940, retired Sept. 30.

THOMAS—Edgar J., Dept. 401-3. Seniority date Dec. 6, 1939, retired Sept. 30.

VAUGHN—Kenneth E., Dept. 515-0. Seniority date Dec. 10, 1951, retired Aug. 7.

WYGANT—Edward G., Dept. 588-0. Seniority date Sept. 18, 1942, retired Sept. 18.

Rider-Driver

CONVAIR

RIDE WANTED — From Lakeside to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Phone Virginia Fullarton, ext. 2200 LF or (home) 448-8399.

General Dynamics News

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Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P. O. Box 1950, San Diego 92112.

Weekend For GD Offered

(Continued from Page 1)

dove pavilion, a three-dimensional shark diarama, tide pools with an array of marine life, three-dimensional "Almanac of the Sea" displays, a glass-blowing kiosk where miniature Sea World animals are molded as park mementoes, and the Shamu kiddie flume.

Pint-sized visitors take the kiddie flume ride in a miniature replica of Shamu and pass a small island inhabited by baby sea lions and Popeye the pelican.

Exhibits include more than 50 aquarium displays, a dolphin petting and feeding pool, a seal and sea lion display, an experimental shark tank, an alligator pond, a turtle pool, and a Japanese carp feeding pool.

Women divers retrieve cultured pearls from oyster beds at the two-acre Japanese Village at Sea World. The story of the cultured pearl is told in display form and tea ceremonies and flower arranging demonstrations are held.

Foods and beverages are available at the Atlantis restaurant, the Hawaiian punch pavilion, and at snack bars at different locations. Picnic areas also are available for families bringing their own lunches.

Ron Bippert of Convair Aerospace-SD's Management Association, who worked out arrangements for the "General Dynamics weekend," said visitors to Sea World will have a chance to see nearly 5,500 performers of the sea at considerably reduced prices.

"Scheduling our General Dynamics visit on two days will give everyone a chance to attend without problems from overcrowding," he said. "This provides an excellent opportunity for friends to get their families together for an educational and entertaining day."

Firemen Vote On 'Miss Torch'

(Continued from Page 1)

Mrs. Reed, a 1956 graduate of El Cajon High School, comes from a "Convair family."

Her mother, Mildred McLeod, is employed in the same area in Dept. 053-0. Her father, Charles McLeod, was a design engineer with the division before his death four years ago. An uncle, Robert McLeod, is an inspector at AF Plant 19.

"Convair has really been good to me," Mrs. Reed commented. "I've worked with a lot of wonderful people."

She was assigned to the F-111 assistant program manager's office at Lindbergh Field before being transferred to Kearny Mesa a few months ago.

The "Miss Torch" competition was the first beauty contest for her ever to enter.

"Being chosen 'Miss Torch' was really a surprise," she said. "My children—Ronnie, 10, Debbie, 8, and Jimmy, 7—were really excited about me being in the parade."

A few days before the "Miss Torch" competition, Mrs. Reed had been asked to pose for publicity pictures with a new comprehensive automatic test equipment (CATE) station developed in an adjoining area in Bldg. 33 at Kearny Mesa.

"I had never had my picture made before at Convair—and now friends in the department are kidding me about the number of times my picture is going to be in the paper," she said.

Personals

CONVAIR

The family of William G. Ravenscroft wishes to thank our many friends at Convair for the lovely flowers and their meaningful contributions of a living and lasting gift as a memorial to the tribute fund of the Boy Scouts of America.

Helen Ravenscroft & family

Births

CONVAIR

BOLTON—Son, Curtis Jr., 6 lbs. 6 ozs., born Aug. 23 to Curtis (Dept. 250-1) and Dollie Bolton.

Deaths

CONVAIR

ALLGEYER — Lloyd J., retired Jan. 1961, Dept. 25-2, died Sept. 14.

PICNIC PAYOFF—Vic DeBolt, Dept. 759 welder, receives travel certificate for seven day vacation for two in Hawaii from George Schmiedel, CRA supervisor, right. On hand adding congratulations were, Harry Rote, F-111 assembly general foreman; Guy Buono, Dept. 759 foreman; Mike Clark, AF Plant 19 chief of industrial relations; Dorothy Corrao, industrial relations secretary. DeBolt was grand prize winner at recent AF Plant 19 picnic.

CL-215 Water Bomber Helps in Fire Crisis

(Continued from Page 1)

.05-inch over a 37,500-square-foot area.

Adkins said the 215 is designed to extinguish new fires quickly and prevent their spread through fast pickup of water from the nearest available source and quick "turn around time."

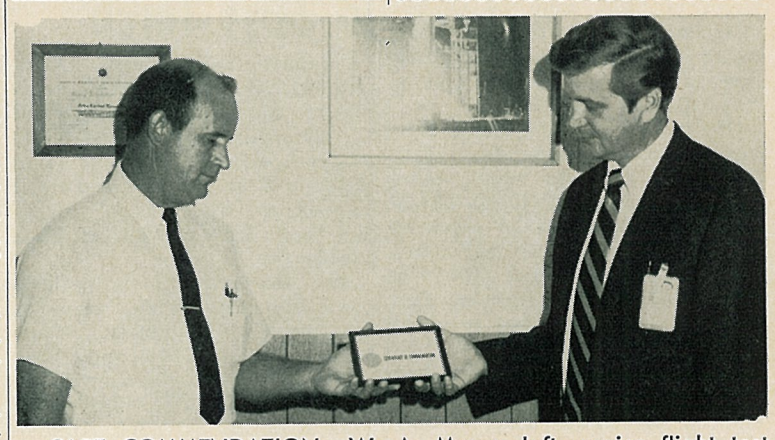
France is using 10 CL-215s and may order eight others to eliminate spread of forest fires in that country.

Adkins said the CL-215 is designed to "hammer" the flame front with water—while fire retardant chemicals usually are dropped ahead of the flames to reduce their rate of progression. One of the 215's advantages is that it can drop its full load through dense forest foliage to halt burning beneath the treetop level.

Two water tanks are located in the fuselage at the center of gravity to minimize need for trim changes during pick-up and drop. The tank contents are released, either simultaneously or individually, through two doors in the hull bottom.

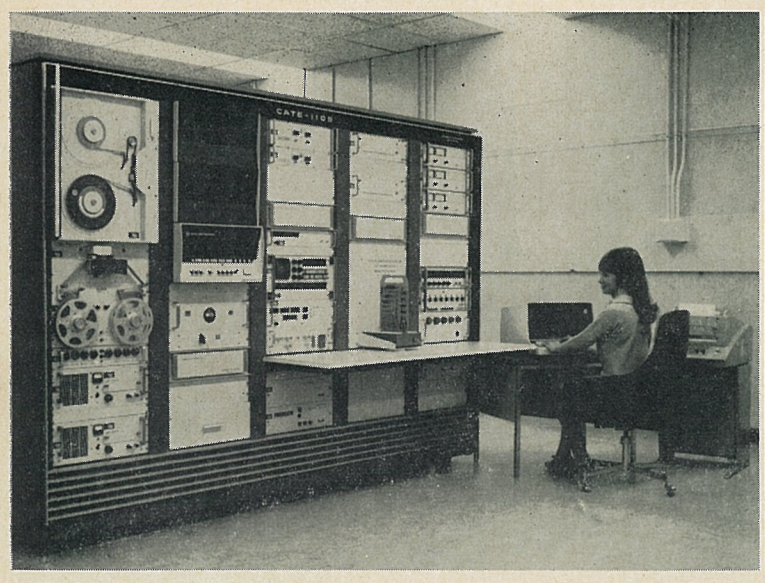
The CL-215 also can be outfitted for aeriel crop, insect, and oil-slick dispersion spraying. All system operations are controlled from the cockpit.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.



CAPE COMMENDATION—W. A. Myers, left, senior flight test engineer in Convair Aerospace Division's Dept. 979-1, receives year's first Value Control commendation certificate at ETR from Dan Sarokon, Complex 36 site manager. Replacing missile handling trailer batteries, which required recharging every four days, with a power supply and adapter for use in control of boiloff valve and emergency pressurization warning system is expected to save $4,200.

JOINT SERVICE HONOR—Capt. Vernon M. Karlin, right, chief of the Defense Contract Administration Services Office production division at Convair Aerospace-SD, receives Department of Defense Joint Service Commendation Medal from Brig. Gen. John S. Chandler, commander of the Defense Contract Administration Services Region-Los Angeles. Karlin received award for outstanding performance in contract administration.



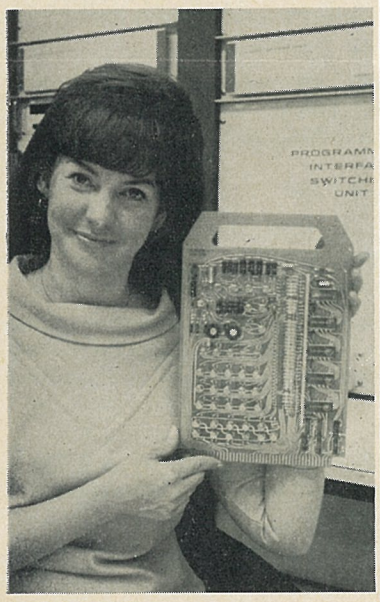
SECOND GENERATION—Operation of new Comprehensive Automatic Test Equipment-1109 unit is demonstrated by Barbara Reed, steno-secretary in Dept. 053-0. Unit, attracting wide interest in aerospace industry, is being used around-the-clock at Convair and is faster and more versatile than previous CATE-1082.

Versatile Electronic Test Station Created by Electro Dynamic Group

A highly versatile, computer-controlled test station has been developed and is being marketed by personnel in the new Electro Dynamic division to solve a large variety of electronic testing problems.

Known as CATE-1109, the unit can test components ranging from small modules to large electronic end-item assemblies at rates to 10,000 units per month. Test results are provided on a cathode-ray tube display or hard-copy printer.

Ben Penners, electronic aerospace ground equipment group engineer who supervised the development, said the CATE-1109 is being used on three shifts six days a week in Bldg. 33 at the Kearny Mesa plant for testing electronic F-111 AGE modules,



SWITCHER — Clean lines of switching module in CATE-1109 is exhibited by Barbara Reed. The CATE-1109 tests electronic units ranging from simple plug-in module to complete F-111 AGE station.

and deliverable end-items, Atlas-Centaur electronic modules, and other electronic components.

"Its versatility and capability are becoming known throughout the aerospace industry," Penners said. "We already have had inquiries on it from about 100 different aerospace and industrial firms." Application has been made for a patent on the system.

CATE-1109 is a second-generation test unit, based on the CATE-1082 developed last year but incorporating new features for greater versatility, higher speed, simpler software programming and operation, increased self-test capability, and reliability.

Ray Waligorski, who handled hardware/software design and integration, said CATE-1109 replaces at least 10 manual test stations and operators and can automatically test without error a full-scale electronic system that otherwise might require up to 50,000 less-reliable individual tests. Logic states of a signal can be measured by the CATE-1109 at a rate of 500 tests per second.

Modules or units to be tested are connected to the CATE-1109 through a simple adapter, the computer locates the corresponding test program, and the test program automatically selects and connects power and stimuli to the test article.

After all required tests are completed satisfactorily, the test program directs display or print-out of results. If a test fails, a print-out pinpoints the problem location.

The "heart" of the CATE-1109 is its Varian 620/i computer and a unique programmable interface switching unit (PISU) of 80 printed circuit boards with outputs connected to pins in the adapter connector. Each circuit board contains logic-level drivers and receivers for creating up to 80-bit input or output registers, a programmable load that can be set to any of 26 values, and the necessary switching circuiting to connect any of CATE-1109's stimuli or measurement capability to any test point.

A software program called FAULTS is available to prepare digital test programs automatically and there is a library of more than 125 standard subroutines for delivery with each test station. Test programs for the unit can be written by engineers with only rudimentary knowledge of FORTRAN computer language. Programs can also be written in BASIC or ATLAS computer languages.

The CATE-1109 can operate in an ordinary factory environment without air conditioning or other special provisions. The unit requires only two of its programmable test devices, a counter/timer and a digital voltmeter, for complete self-testing—eliminating need for use of large amounts of external calibration equipment.

In addition to Penners and Waligorski, personnel who had key roles in development of the CATE-1109 included Frank Moebus, hardware; Art Mason, library subroutines; Russ Cicotte, systems software; and Lyle Cocking, switching.

Tail Breaks At 191 Per Cent Of Load Design

In a successful test which was concluded recently in a laboratory at Convair Aerospace at San Diego, the horizontal tail of the F-111 was intentionally loaded to a point where it broke.

When the horizontal tail finally broke, the load applied to it had reached 191 per cent of the critical design load limit of that component of the airplane structure.

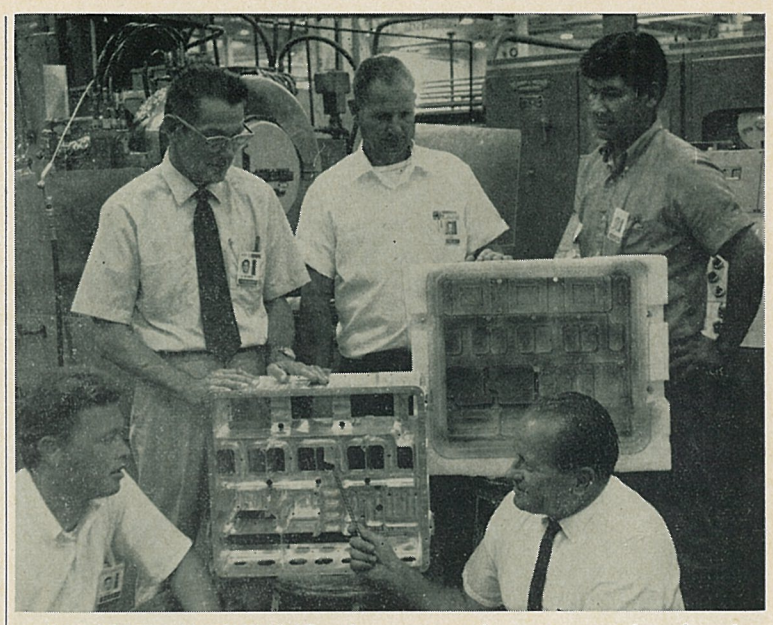
The Air Force requires that the F-111's structure withstand loads of up to 150 per cent of the critical design load.

Subsequent tests to destruction will be carried out on the wings and fuselage of the F-111. Several more weeks will be required to complete these tests.

The F-111 static test program has been under way since 1966. It is one of three long-range programs designed to prove the soundness of the F-111 structure. The other two are the fatigue-test program and the flight-loads test program, both still under way.

The fatigue test program involves the effects of repeated simulations of flight loads upon the airplane's structure. Such repeated loads eventually produce fatigue or cracking of metals. Engineers determine when fatigue will occur and what portion of the component will be affected.

The flight-loads test program involves measurement of actual loads upon flying airplanes. Specially instrumented F-111s are used to record these loads for comparison and verification with loads predicted by design engineers.



INTRICATE MACHINING—Largest and most complex housing machined automatically on four-axis numerical-controlled mill at Convair's Kearny Mesa plant is examined by tool engineer, programmers, and machinist. From left are (standing) Tom McManus, Harry Ruby, Victor Ruiz, (kneeling) Robert "Rocky" Howe and Alex Markewich. Styrofoam billet used in test run is at right of metal part.

Large Housing Machined On Tape-Controlled Mill

The largest and most complex housing to be machined on a MilwaukeeMatic four-axis, tape-controlled mill at Convair Aerospace's Kearny Mesa plant was completed recently in 60 hours of machine time.

Tom McManus, Dept. 420-3 tool engineer, said the intricate housing for the Improved Centaur D-1 launch vehicle sequence control system was machined from a 265-pound 7 X 17 X 23-inch aluminum-alloy billet. The finished article weighed 18 pounds.

"It would have been impossible to produce this part with such precision by conventional milling methods," McManus said. "If it could be done by manual machining techniques, it would take at least 600 hours for each of the housings."

Because of the complexity of the part and time considerations, three programmers were used to prepare the numerical control program for the machining—directed from punched mylar tape through automatic use of 69 different end mills, drills, and taps. Some of the tools were used three or four times during running of the tape.

The aluminum alloy billet was machined from three different positions. Alex Markewich prepared numerical control programming for the bottom, Harry Ruby for the top, and Robert Howe for the sides. All are in Dept. 420-3.

Victor Ruiz of Dept. 731-0 was numerical control machinist for the project.

"Proofing" of the numerical control tapes was accomplished by machining one of the intricate designs from inexpensive styrofoam before the first production unit was machined from metal.

The first of the metal units was used on the D-1 vehicle mockup to check configuration compatibility and the second was being used in extensive vibration and shock testing.

McManus said styrofoam machining for cost saving in proofing of numerical control tapes is a technique that has been used for several years at Convair.

"We've been machining a magnesium billet that cost $660 on a numerical controlled mill," he said. "The styrofoam billet used in proofing the tape program cost less than $5."

Packard Strongly Backs F-111 in Stennis Report

The F-111 has passed strength test programs with flying colors, Deputy Defense Secretary David Packard has reported to Congress.

Packard told the Senate Armed Services Committee the "aircraft is structurally sound and will, indeed, perform its mission."

No major design changes or significant operational restrictions are needed.

Packard's letter to Senator John C. Stennis, committee chairman, is the most unequivocal endorsement yet of the F-111.

With his letter, Packard enclosed a 20-page Air Force report which said there was "a high level of confidence" that the aircraft would have a 15-year operational life as against the 10 years originally called for.

On the basis of the report, Packard informed Stennis he had approved a 177.8 million dollar Air Force contract for General Dynamics Corporation to supply an additional 24 F-111s for a total of 538, including 24 planes for Australia.

The Armed Services Committee demanded that as a condition for approving money to buy additional F-111s the Secretary of Defense should certify "to the structural integrity of the aircraft," as Packard has now done.

The Air Force report, signed by Air Force Secretary Robert Seamans and Air Force Chief of Staff Gen. John Ryan, said that while the testing program has not been completed, "each successful test increases the confidence that the F-111 fleet is free of the structural flaws of the type that caused the loss of an aircraft in December."

It added that there was only "a very small band of uncertainty as to meeting the ultimate strength requirements for the total structure."

"It is therefore unlikely that the remaining test program will show the need for any major design changes or significant operational restrictions," the report said.

Scale Model Used for Film Depicting Operation in Space

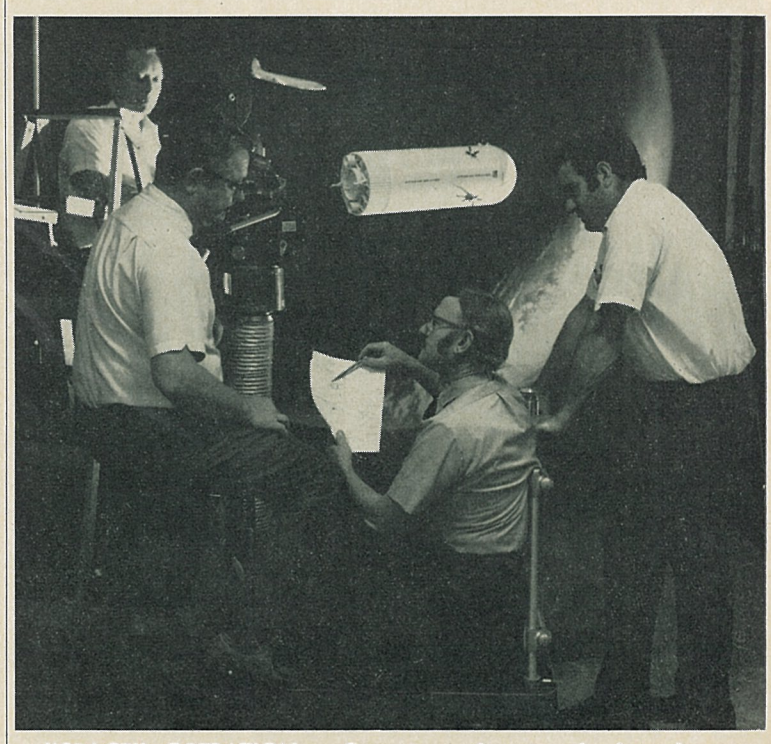
Convair Aerospace division's 1/20-scale model of an earth surveys experiments module **(GD/NEWS, Sept. 2)** was featured in a three-minute motion picture film used in the division's final Phase A Experiment Module Concepts Study presentation last month at NASA's Marshall Space Flight Center in Huntsville, Ala.

Denis J. Powell, study manager, presented the film in Huntsville. It also was shown last week by Wally Withee, director of advanced space systems at the 21st International Astronautical Congress in Germany.

Austin Ryan, a member of the experiment module study team, said the short film was produced to demonstrate visually how a typical experiment module might operate in space and how antennas, sensors, and other instrumentation might be packaged and deployed from such a module.

Robert Montague, chief of motion pictures and television for the division, said movement of cameras made the experiments module appear to move through space and dock with an orbital space station.

Montague said the realistic looking "space" production was planned, filmed and edited during a one-week period.



"SPACE" OPERATION — Camera action to simulate in-space operation of Convair experiment module and space shuttle orbiter is outlined by Robert Montague, chief of Convair motion pictures and TV section, second from right. Others, from left, are Charles Guy, William Carter, and William McClure.

FIT TO PRINT—Burt Brockett of Convair Aerospace-SD art and editorial section discusses poster designed by Carolyn Poppendiek, San Diego State art student. Featuring safety theme of "Don't Feed the Animals," poster was striking enough to warrant in-plant display.

Employes Lose Homes, Belongings As Fire Sweeps 185,000 Acres

Homes of at least four Convair Aerospace - SD employes were among 382 destroyed in the recent 185,000-acre Laguna fire.

James R. Duffy of Dept. 460-0 had been named chief of the Crest Volunteer Fire Department the day before his two-story home and 116 others burned to the ground in the Crest area east of El Cajon.

Others with homes destroyed included three Dept. 015-0 employes—Burton Davis; his son, Burton Jr.; and Walter Woodward. They had adjoining homes on Lyons Valley Road in Jamul.

Many others were surprised to find their homes still standing in areas where others had burned.

Duffy's home burned on his wife's birthday while he fought to save others in an adjoining area.

His wife, Dottie, took only some clothing for their seven-month-old baby, Jamie Lynn, when she was warned to evacuate. They have two other children.

In addition to their home and furnishings, they lost an auto and two new trail bikes. During the week after the fire, Duffy organized a "complete disaster set-up" to aid residents of the Crest community.

The Davis family had lost a home to fire once before — 13 years ago in Idaho. They saved only some clothing and family photos when they were evacuated but plan to rebuild at the same location.

Woodward and his wife and two children also saved some clothing when they fled the oncoming flames. Only a children's swing set remained undamaged at their homesite.

Fellow employes in Depts. 015 and 460 took up a collection to aid the fire victims—and Con-Trib Club aid also was expected.

Six Convair Aerospace-SD men who are members of the Sheriff's Reserve assisted with evacuation, traffic control, and patrol duties during the fire.

They were Reserve Sgts. L. E. Johnson, T. C. Mitchell, and Carl Weber and Deputies Tom Field and Norm Wallace.

Members of the CRA Amateur Radio Club provided weekend emergency communications and message relay from evacuation centers, the club station, and other locations.

They included Dennis Scannell, Alex Halyburton, Dale Taber, Dan Lanthier, L. D. Rush, and Lee Bishop.

FIRE AFTERMATH—Only debris remains from homes of several Convair Aerospace families after worst fire in county's history. Burton Davis of Dept. 015, his wife, Bernadette, and son, Burton Jr., also of Dept. 015 (standing) got help from fellow employes with removal of debris Oct. 3 from their homesite on Lyons Valley Road in Jamul. Among those assisting (kneeling from left) were Blas Rodriguez, Joe Shinn, Ed Monroig, Larry Axtel, and Gordon Olcott.

Con-Trib Funds Aid Fire Victims

Convair Employes' Con-Trib Club committee members at their Oct. 1 meeting approved a $10,000 grant to the American Red Cross for use in providing assistance for families who lost their homes in recent fires in San Diego County.

The committee previously allocated $1,000 to the Mayor's Committee on Youth Opportunity for the YMCA swim program and $647 to Neighborhood House for an inter-agency summer youth program.

Other grants approved in meetings last month included $3,400 to Community Mental Health Services for its day care center and children's in-patient unit, $1,200 to Family Service Association, and $3,000 to Neighborhood House.

Doctors Briefed On Employes' Medical Costs

About 35 San Diego area physicians who handle a considerable volume of claims for treatment of Convair Aerospace and Electro Dynamic Division employes and their families were guests of Dr. G. M. Clarke, medical director, Sept. 30 for a luncheon meeting and tour of DC-10 and C-5 production areas at Lindbergh Field.

Speakers at the luncheon included Paul Allgire, chief of employe benefits, and Richard Darval, group claims supervisor for Aetna Life and Casualty Insurance Co. which provides claims administration.

Darval said General Dynamics, through Aetna, paid about $4.5 million in claims in the San Diego area during the year ending July 1.

"The employes know, and we want to make sure you know, that the group health plan is not a total-pay plan," he said.

"Benefits of the insurance policy are designed so employe's medical bills are partly paid by the insurer and partly by the employes . . . The employer, the insurance carrier, and certainly the employe is concerned that the premium dollars and out-of-pocket dollars will be spent for medical care charges no greater than the usual, customary, and reasonable level for the community."

Darval said many believe losses sustained in group health plans are absorbed by the insurance carrier.

"This is not true, as the dollars which must be made up are paid by the employer. In this case Aetna Life and Casualty is the plan administrator and all the premium dollars spent to date have come from General Dynamics and its employes."

Darval asked the physicians to be concerned about a fair level of fees, complete claim forms in a timely fashion, and keep lines of communication open between their offices and the in-plant employe benefits offices.

Dr. Clarke said similar meetings are being scheduled at other General Dynamics Divisions at the suggestion of Dr. John McCann, Corporate director of health, safety, and security, and Algie Hendrix, Corporate vice president.

Duncan Named Patent Counsel

John R. Duncan, patent counsel for Stromberg DatagraphiX since May 1969, has been named patent counsel for Convair Aerospace division's San Diego operations. He reports to H. Cushman Dow, general counsel.

J. R. Duncan

Duncan, before joining DatagraphiX, was employed five years as patent attorney for the Nuclear Energy division of General Electric and for the Xerox Corp.

He twice has served as a patent examiner for the U.S. Patent Office—in 1956 before entering the U.S. Navy and from 1960 to 1964. While on active duty in the Navy from 1957 until 1960, he had duty as a deck officer on the USS Roosevelt and as an engineering officer at the U.S. Naval Station in San Diego.

Duncan is a graduate of South Dakota School of Mines and Technology, where he received a degree in chemical engineering in 1956, and earned his law degree from George Washington University in 1956.

He is a member of the California State Bar, the American Patent Law Association, the San Diego Patent Law Association, and the San Diego County Bar Association.

TIMELY TOPIC—Diana Moore, Convair Aerospace-SD secretary, reminds General Dynamics people to turn back their clocks an hour at 2 a.m., Oct. 25 as Daylight Savings ends.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—What is policy regarding company approval of attendance at technical symposiums and conferences? Is this limited to those presenting papers?

A—Preference is given to those who are part of discussion groups, active committee members, officers and those presenting papers. General attendance for absorbing technical content is up to the group supervisor to justify.

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Q—About a month ago duration of the whistle signaling shift start and change was extended. For those on the mezzanine this is annoying. Can't the duration be cut?

A—No changes have been made in the whistle duration in the last two years, either at KM, LF or AF Plant 19. Duration is controlled by a pre-set cam and differs only slightly at one plant or another.

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Q—Has there been any effort to suggest to NASA a capability for a rescue mission for Apollo or other manned space flights stranded in space?

A—NASA has not requested such a study. However, space shuttle will include rescue capabilities.

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Q—Do flat salary and supervisors receive "Commendation Certificates" for Employe Suggestions but no monetary reward?

A—Commendations are awarded only for CRPs and VCPs. Cash rewards are given only for ESs, and all employes are eligible (except for supervision, cost reduction representatives, value control coordinators and personnel responsible for administering the ES program).

Centaur Program Mgr. Visits Munich For Helios Meeting

Deane Davis, Centaur program manager for Convair Aerospace Division, was in Munich, Germany, last week to participate in the Project Helios third joint working group being hosted by the German space agency.

In Project Helios, a joint effort by the U.S. and West Germany, two scientific satellites will be launched into orbit around the sun in 1974 and 1975. Titan-Centaur launch vehicles will be used.

Both U.S. and German experiments will be aboard the Helios orbiters for an investigation of properties and energy distribution in the vicinity of the sun.

The Helios satellites are scheduled to be launched into elliptical orbits that will take them to within 23 million miles of the sun. Distance between the earth and the sun is about 93 million miles.

The spacecraft will require about three months to reach the nearest point to the sun in their orbits and will make a second pass about six months later.

Ants Kutzer of the Federal Ministry for Scientific Research is project manager for Germany and Gilbert Ousley of NASA for the U.S.

Davis also planned to confer with representatives from some of the European nations in the Intelsat consortium and to visit some of the General Dynamics International Corp. offices while in Europe.

DC-10 Production Line Expands; Third Plane Prepared for Flight

Convair Aerospace-SD's DC-10 production facilities are being expanded at the Lindbergh Field plant with the current F-G section line being relocated and new fixtures and tooling added in Bldg. 2.

"Additional space was needed as we build up to full-production rates for the DC-10 Series 10 and additional major fixtures and tooling are added for the Series 20 and Series 30 follow-on aircraft," Bill Wise, manager of industrial engineering, said.

"Relocating the F-G line in Bldg. 2 will give us the additional space needed for work in progress and avoid overcrowding of facilities in Bldg. 3."

Eight major fixtures are being moved and new fixtures will be added before the new production line setup in Bldg. 2 is completed in December. Tom McCubbin and Frank Van Dusen are coordinating the project, which was 30 per cent completed last week, for the industrial engineering department.

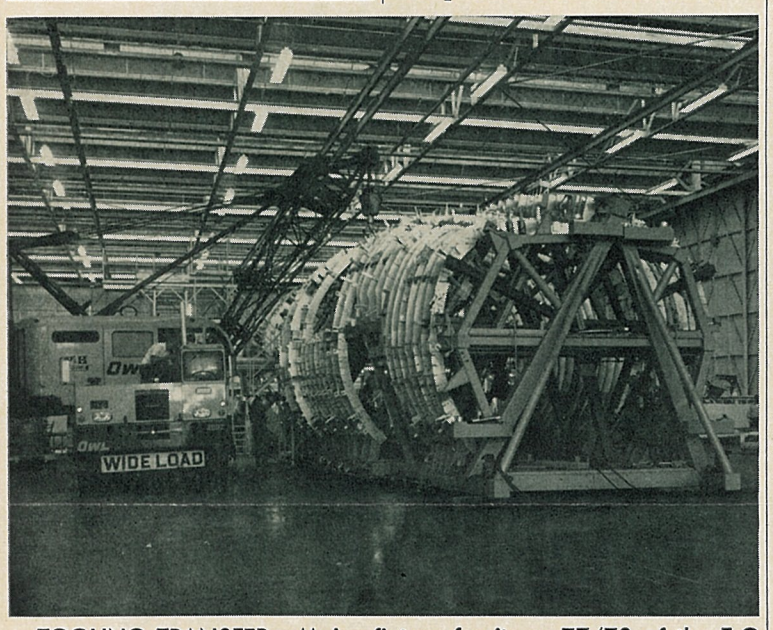
Jack Hurt, DC-10 program manager, said a routine 50-hour engines check has been in progress on the first DC-10 test aircraft. The next series of flight tests were scheduled from Yuma, Ariz.

The third of the DC-10 tri-jets to come off the McDonnell Douglas final assembly line is being prepared for its maiden flight before the end of the year. The second is being used in an extensive static testing program and is scheduled to fly early in 1971.

Lufthansa German Airlines has announced plans to purchase four intercontinental DC-10s for delivery in 1974. Its 255-passenger version of the DC-10 is planned for use initially in development of routes between Europe and the Far East and service between Europe and South America.

Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, Oct. 17. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. Also not permitted are canvas or open-toed shoes and bare feet.



TOOLING TRANSFER—Major fixture for items 77/78 of the F-G section of the DC-10 tri-jetliner is transferred from Bldg. 3 to Bldg. 2 at Convair Aerospace-SD Lindbergh Field plant. Complete F-G section assembly line is being relocated and expanded.

Data Recorder's Idea Earns $525

Barbara Dill, an engineering release data recorder in Dept. 565, has received an initial payment of $525 for an Employe Suggestion which eliminates unnecessary handling of engineering control data received from the Fort Worth operation of Convair Aerospace division.

Her suggestion resulted in the reduction of data handling in expediting the release of engineering department information.

F. D. Applegate, director of product design, in making the presentation, noted that suggestions of this type can only be found by individuals who evaluate their own work habits and activities.

An old hand at submitting ES's, Barbara said this was her fourth approved suggestion in the last three months. Three more are being evaluated.

You Can Become Regular Bond Buyer For 50 Cents a Week

FIRST INSTALLMENT—Barbara Dill, left, receives initial payment of $525 from Dan Applegate, director of product design, for employe Suggestion that streamlines procedure for handling engineering drawing releases.

LEAGUE CHAMPS—Shelly White, center front, holds perpetual trophy won by Boogaloos team he managed in CRA fast-pitch plant softball league. Others, from left, are Bruce Fowler, Frankie Mafnas, Joe Terramagra, Gilbert Petzen, Lou Rossi, Ross Warfel, Rich Ahlgren, Eugene Gray, Ray Coulter, and Grady Tryon. Players John Durcan, Ruben Huerta, Loren Roark, and Herb Gallaway were not present for awards ceremony.

NAS Skipper to Talk For Club Members

Capt. Alfred W. Chandler Jr., skipper of the Miramar Naval Air Station, will speak to Electro Dynamic-SD Management Club members at a "ladies night" meeting Oct. 21 at the NAS Officers Club.

A social hour is scheduled for 5:30 p.m., prime rib au jus dinner at 6:30 followed by Capt. Chandler whose topic will be "Managing Miramar Naval Air Station."

Capt. Chandler

Before reporting to Miramar recently, Capt. Chandler was on the staff of the Commander Seventh Fleet as officer in charge of the Saigon, Viet Nam detachment. A 27-year Navy fighter and test pilot veteran, he holds the Distinguished Flying Cross and six Air Medals.

Capt. Chandler was executive officer of the USS Ticonderoga when the carrier was awarded a Navy Unit Commendation for initiating launch strikes against North Viet Nam after the Tonkin Gulf incident in 1964.

Tickets, at $4.25 each, are available from ticket boosters and deadline for purchase is Oct. 19.

Small Business Workshop Planned

V. O. Olson, Convair Aerospace small business administrator, has announced that the Small Business Administration (SBA) will conduct a workshop for people interested in starting small business enterprises from 1 to 4:45 p.m. Oct. 27 in the San Diego Public Library.

"The SBA is interested in seeing that as many people as possible be informed of this meeting," Olson said. "Discussions will be held on finance, record keeping, taxes, site location, insurance coverage, franchising, administration, and forms of business structure."

EXHIBIT SCHEDULED AT "SPACE CONGRESS"

A Convair Aerospace Division exhibit will highlight Atlas-Centaur, space shuttle, and Craftsmanship programs at the First Western Space Congress Oct. 27-29 in Santa Maria, Calif. A short version of the "Go Atlas! Go Centaur!" film will be included.

Mueller to Discuss 'Dynamics in 70s'

Dr. George E. Mueller, senior vice president of General Dynamics to whom Convair Aerospace and Electro Dynamic Divisions report, will discuss General Dynamics in the 70s at a Convair Management Association meeting Thursday, Oct. 29—one day later than originally scheduled.

The meeting will be in the Town and Country Room of the Town and Country Hotel Convention Center with a no-host social hour at 5:30 and roast beef dinner at 6:30 p.m.

Tickets are $4 for members and $5 for others and are being sold by Association boosters.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 KM. Deadline for next issue of GD/NEWS is Oct. 20. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS — Meet 7:30 p.m., Oct. 21. San Jacinto backpack trip, Oct. 24-25.

BADMINTON—Play 7-10 p.m., Mondays, Federal Bldg., Balboa Park.

BRIDGE — Duplicate bridge sessions, 7:30 p.m., each Friday.

CAMERA CLUB—Meet 7:30 p.m., Oct. 18. Mission Bay Photo Festival Oct. 31-Nov. 1.

CERAMICS — Meet 9 a.m.-noon and 7-10 p.m., Tuesdays and Thursdays.

CHESS—Play 7 p.m., Oct. 21.

CHORUS—Rehearsals 7:30 p.m., Mondays.

COUNTRY & WESTERN MUSIC—Meet 7:30 p.m., Thursdays.

DELTA DIVERS—Meet 7:30 p.m. tonight (Oct. 14).

FENCING—Workouts and instruction 7:30-10:30 p.m., Fridays. YWCA, 10th & C Sts.

FISHING CLUB—Potluck, 6:30 p.m., meeting 7:30, Oct. 20. Gillespie Field Clubhouse.

GARDEN CLUB—Fall Flower Show, 1-6 p.m., Nov. 1, Floral Association Bldg., Balboa Park.

GOLF—Los Penasquitos tourney, Oct. 18-19.

GUN CLUB—Fun shoot, 9 a.m., Oct. 25, Gillespie Field gun range.

HEALTH CLUB—Open 9:30 a.m.-10 p.m., Monday through Thursday; 9:30 a.m.-9 p.m., Fridays; 9 a.m.-noon, Saturdays; "women only" weekdays, 9:30-11 a.m.

ICE SKATING—GD family skate night 6:15-7:45 p.m. each Thursday, House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1 (includes skates).

MINIATURE RAILROAD—Operating sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions 7 p.m., each Wednesday, CRA Missile Park.

ORGAN CLUB—Meet 7 p.m., Oct. 27, home of Mr. & Mrs. Paul Crumley, 5254 Castle Hills Dr., San Diego.

PISTOL CLUB—Club shoots 9:15 a.m., Oct. 25, S.D. Police Pistol Range.

RADIO CLUB — "Jamboree on the Air," Oct. 16-18, for Boy Scouts. Meeting, 7:30 p.m., Oct. 15.

RIDING CLUB — Meeting 7:30 p.m., tnioght (Oct. 14). All Gymkhana show, Nov. 1.

SCULPTURE — Workshop sessions, 7:30-10:30 p.m., Mondays.

SPECIAL EVENTS—Sea World Days, Oct. 24-25.

SPORTS CAR CLUB — Meeting 7:30 p.m. tonight (Oct. 14).

SQUARE DANCE—Dance 8-10 p.m., Thursdays.

SWIMMING—Family swim night 7-9 p.m., Oct. 17.

TOASTMASTERS—Convair club meet 4:30 p.m. Wednesdays. Dynamic club meet 5:30 p.m. Thursdays.

Meeting Planned On Travel Tours

Convair Recreation Association has scheduled a comprehensive meeting on travel tours for 7:30 p.m. tomorrow (Oct. 15) in the CRA Clubhouse.

Among new programs being offered are two-week European tours starting as low as $445 and including round-trip air transportation, hotel accommodations, sightseeing, and most meals.

George Schmiedel, supervisor of recreation, said response has been excellent to plans for a Christmas tour to Mexico departing Dec. 19.

Fishing trips to Mulege, a small village on the Gulf of Mexico, are being offered for sportsmen at $180. Several other tour "packages," including different Hawaii travel programs, are being offered.

Color films will be shown, coffee will be served, and door prizes will be given at the meeting tomorrow.

Pistol Club Names Third-Quarter Team

CRA Pistol Club has named Jerry Lehrer, Red Schneider, Charlie Kropp, and Jim Half-acre to its third-quarter competition team, based on individual scoring in previous club competition.

Division leaders in .22-calibre police course firing Sept. 27 and total scores were Lehrer, 291, master; Leon Thomas, 275, expert; and Tim Thomas, 211, marksman. Winners in .45-calibre short national course shooting were Kropp, 265, first, and Schneider, 254, second.

'Hams' to Assist In Scout Jamboree

Convair Amateur Radio Club's station W6UUS in the CRA Clubhouse will be participating this weekend (5 p.m. Friday through 5 p.m. Sunday) in a "Jamboree on the Air" being held in conjunction with the 13th annual Boy Scouts of America Jamboree.

A. J. Halyburton, club commissioner, said the station will be contacting others across the country for "rag chewing" and will attempt to contact station HB9S in Geneva, Switzerland, home of the World Scout Bureau, and K2BFW in Washington, headquarters station for the Boys Life Radio Club.

Two Convair Aerospace-SD men who are scoutmasters, Dick Rowe of Troop 286 and Bob Niderost of Troop 208, will have more than 50 boys from their troops visiting the CRA "ham shack" to participate.

Other scoutmasters wishing to schedule visits may phone Halyburton at ext. 1846 KM.

Highlights of Year Adventurers Theme

"Highlights of the past year" is the theme of the Oct. 21 CRA Adventurers Club meeting in the CRA Clubhouse.

Set to get under way at 7:30 p.m., members will exhibit photographic slides and prints and natural finds and artifacts collected during club-sponsored outings. Additionally, there will be a "special display" category where members can enter items not obtained on club trips but related to club activities.

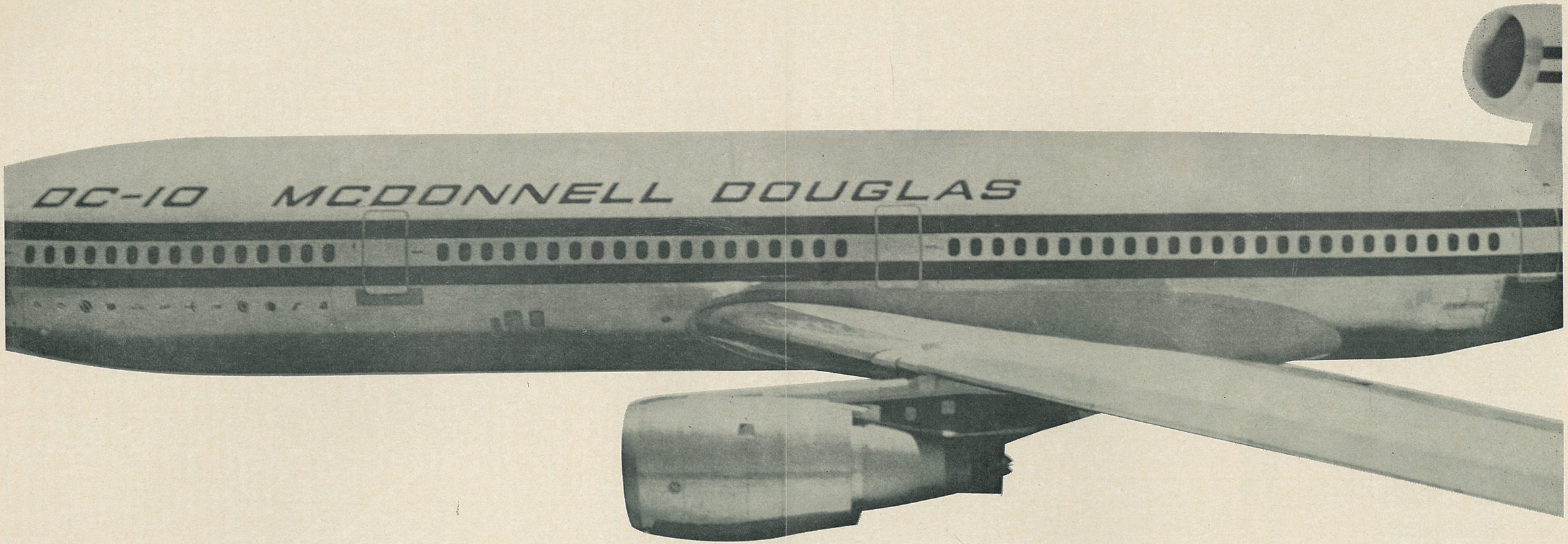
Members will judge entries and prizes will be awarded for each category. Those attending are also invited to bring 10 favorite slides to show and discuss during the meeting.

Plans for the Oct. 24-25 backpack trip to San Jacinto will be finalized during the meeting.

Lens Club Schedules 'Equipment Auction'

CRA Camera Club's popular "equipment auction" is set for 7:30 p.m., Oct. 18 in the Photo Arts Bldg., Balboa Park.

Club members will be assisting in the Mission Bay Photo Festival scheduled Oct. 31-Nov. 1. Convair employes interested in helping should contact Bruce Williams, ext. 3183 KM.



The DC-10

This is the superjet that's going to add new dimensions of spaciousness and convenience to air travel. This is the airplane that promises a new measure of operating economy, versatility and reliability.

The McDonnell Douglas DC-10s that the world's most demanding airlines will be putting into service will make places in the sky roomy enough to accommodate up to 345 travelers, in comfort.

Our Convair division in San Diego, California, is producing the fuselage sections that make up the passenger, cargo and baggage areas of the DC-10. And Convair is building in the kind of quality that has maintained our reputation for reliable air transportation for more than 47 years.

The DC-10, America's newest luxury jetliner. It's another example of what technology can accomplish when it's handed a problem.

At General Dynamics we put technology to work solving problems from the bottom of the sea to outer space... and a good bit in between.

GENERAL DYNAMICS

1 Rockefeller Plaza, New York, N.Y. 10020

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 23, No. 20 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, October 28, 1970

Con-Trib Drive Brings Support To 91 Per Cent

Participation in Convair Aerospace-SD's employes Con-Trib Club was increased to 91 per cent during the recent annual membership campaign.

"Departmental coordinators did an exceptional job," said Del Dimmitt, chief of safety and fire who served as chief coordinator for the campaign.

"We appreciate the response from the employes. The campaign brought our Con-Trib membership to 12,734 and many who already were participating increased the amount of their contributions."

Employe contributions to the Con-Trib Club through automatic payroll deductions help support more than 100 health, youth, and community service organizations in San Diego County and other areas where Convair Aerospace-SD personnel are employed.

Ten per cent is set aside for emergency aid to employe families struck with unexpected catastrophies.

Dimmitt said the material department, with 98.7 per cent of its employes signed up, deserved special commendations for a "job well done" during the campaign.

Departments and their percentage of participants include: general manager and community relations, 100; legal, 100; contracts, 93.7; marketing, 100; new product development, 95; finance, 93.3; engineering and space shuttle, 90; industrial relations, 95; reliability, 96; material, 98.7; launch vehicle programs, 91; VAFB 95; ETR, 95; operations, 89; and manufacturing, 87.

Coordinators were John Kern, general manager and community relations; Dick Peck, legal; Tom Dougherty, contracts; Joe Heatherly, marketing; Nick Durvis, new product development; Fred Wynkoop, finance; Bill Ochodnicky, engineering and space shuttle; Jim Watt and Lou Braun, industrial relations; Paul Benner and Val Wynn, reliability; Don Berkow and Robert Quinn, material; Chuck Simmons, launch vehicle programs; Ray Forrest, VAFB; Marv Tooley, ETR; Frank Blake, Ernie Wally, and Manny Moseley, operations; and George Carroll, H. C. Medaris, William Martin, and Gerry Nuss, manufacturing.

Rockets Tickets On Sale at $1 Off

Choice bargain ducats to all San Diego Rockets home games will be available to all General Dynamic employes throughout the NBA season.

Regular $5 center court tickets are on sale for $4 from Convair Aerospace-SD employe benefits offices and Electro Dynamic-SD industrial relations.

Holiday Schedule Includes Six Days

Thanksgiving, Christmas, New Year and year-end holidays have been announced. They are:

Thursday, Nov. 26—Thanksgiving day.

Friday, Nov. 27—Additional holiday.

Thursday, Dec. 24—Year-end holiday.

Friday, Dec. 25 — Christmas day.

Thursday, Dec. 31—Year-end holiday.

Friday, Jan. 1—New Year's day.

Savings and Stock Plan Decisions Due in Nov.

Next month will be a time of decision for members of both the hourly and salaried Savings and Stock Investment Plans who have accounts for the Plan Year 1967.

Between Nov. 2 and Nov. 30, these members will have the opportunity to request distribution of the full amount of their 1967 accounts (valued as of Dec. 31, 1970) or to defer distribution.

Members choosing distribution of the 1967 accounts may expect to receive the value of their accounts from Bankers Trust Co., Plan Trustee, by mid-February, 1971. This will be the second short term distribution for members of the Hourly Plan, and the third for some in the Salaried Plan.

For those who decide to defer distribution, Bankers Trust Co. will hold and continue to invest their funds until retirement or termination of employment, subject to earlier withdrawals as provided in the Plans.

An amendment to the Salaried Plan now provides more flexibility for withdrawal of deferred accounts. In addition to the short term distribution of their 1967 accounts, those salaried members with a deferred account (for the Plan Years 1965 and/or 1966) may request the new "special distribution" of all or part of the account (in multiples of 10 per cent). This decision also must be made next month and distribution, if requested and approved by the Plan Committee, will be made in August 1971 and will be based on the values as of June 30, 1971.

During the week of Nov. 2-6, employe services will distribute the necessary short term distribution election materials to all eligible members of both Plans. These include instructions, a statement of the unit values as of Sept. 30, 1970, an income tax worksheet and two election cards, one to request distribution and one to elect deferral. (Some will receive two pairs of cards, due to participation in both the Salaried and Hourly Plans during 1967.) For members who have a deferred account under the Salaried Plan (years 1965 and/or 1966) and who wish to request the new special distribution, employe services will include instructions on how to obtain and complete an additional election card.

Every eligible member who desires to receive a distribution of his Salaried or Hourly 1967 account MUST complete the proper election card, sign and return it to employe services no later than Nov. 30, 1970. It is equally important for those members who decide to defer distribution to sign the proper card and return it to employe services before the Nov. 30 deadline.

Each individual must make his own decision as to distribution or deferral, in the light of financial factors affecting himself and his family, Algie A. Hendrix,

(Continued on Page 2)

AF Chief of Staff Downs Drone In Falcon Firing From F-106

Gen. John D. Ryan, U.S. Air Force chief of staff, recently destroyed a 600-mph Firebee target drone in practice firing from a Convair F-106.

In the exercise on the Tyndall AFB, Fla., weapons range which extends over the Gulf of Mexico, General Ryan used a Falcon air-to-air missile for the drone "kill."

General Ryan flew the mission as pilot of the Convair F-106 with Capt. R. A. Moon also aboard the two-seat aircraft. The Firebee, maneuvered by remote control, simulated an enemy aircraft.

Pilots of Aerospace Defense Command fighter aircraft test their skill and weapons against the target drone regularly in firing programs on the Tyndall range. It was the first time, however, for the chief of staff to fire at a Firebee from an ADC interceptor.

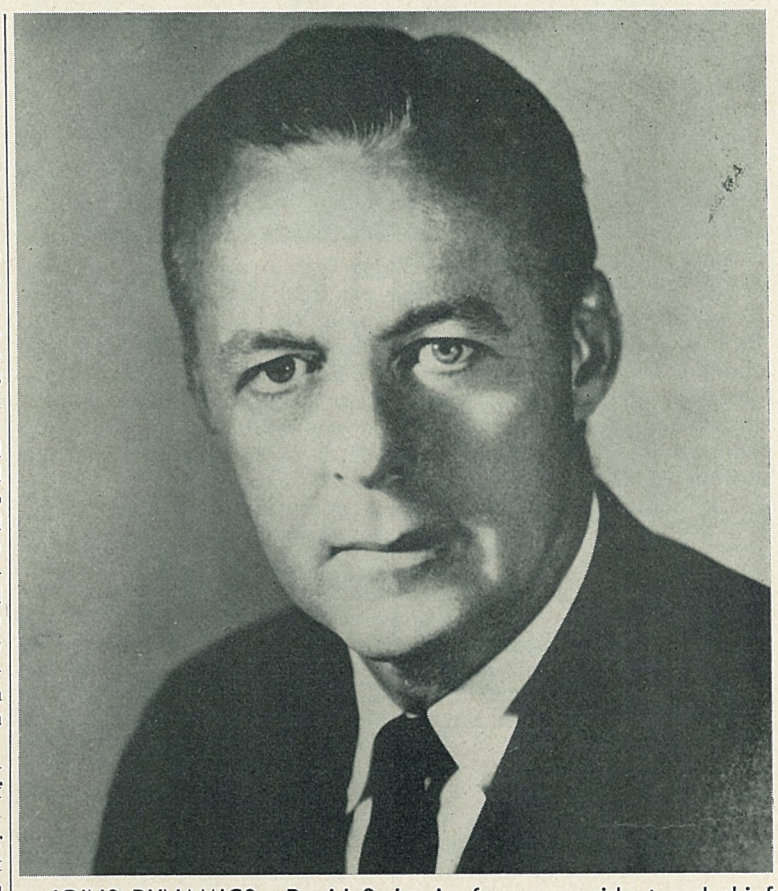
B. F. Ferguson, Convair Aerospace-SD F-102/F-106 deputy program manager, said General Ryan, during his visit to Tyndall AFB, also was briefed on an F-106 Gatling gun-mounted "six shooter" aircraft.

Convair F-102 and F-106 interceptors from six ADC and Air National Guard units are competing this week in the William Tell-1970 interceptor weapons meet on the Tyndall range.

Lyman Josephs, Convair Aerospace-SD vice president and general manager, is to present delta-shaped trophies to winners at an awards presentation.

A "six-shooter" aircraft is featured in a combined Convair Aerospace and Air Defense Weapons Center exhibit at the interceptor meet.

"CHIEF" PILOT—Gen. John D. Ryan, Air Force chief of staff, is briefed on F-106 by Capt. R. A. Moon prior to flight during which general shot down target drone.



JOINS DYNAMICS—David S. Lewis, former president and chief operating officer of McDonnell Douglas, has joined General Dynamics as chairman of the Board of Directors and chief executive officer.

Directors Elect David S. Lewis as Board Chairman

The Board of Directors of General Dynamics Corporation has elected David S. Lewis as chairman and chief executive officer.

Roger Lewis, who has been chairman and president of the Company since 1962, will continue as president and as a director.

David Lewis, 53, has been president and chief operating officer of the McDonnell Douglas Corporation, St. Louis, Mo., since April, 1967. He has been with the St. Louis firm for 24 years and was president of McDonnell Company prior to its merger with Douglas Aircraft Co. in 1967. After the merger he also served as chief executive officer of the Douglas Aircraft Co. Division of McDonnell Douglas.

Prior to joining the McDonnell Company, he spent eight years with Glenn L. Martin Co., Baltimore, Md. in aircraft design. He is a graduate of Georgia Institute of Technology, with a BS in aeronautical engineering, 1939, and a native of North Augusta, South Carolina.

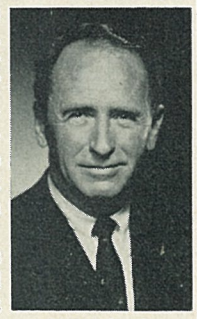
The Board noted that the Company has been seeking to strenghten its top management and is very pleased to acquire the services of David Lewis.

David Lewis joined McDonnell as chief of aerodynamics and in 1952 was made head of the new preliminary design department of the airplane engineering division and three years later was promoted to manager of sales. He was elected to the Board of Directors in 1957 and became a senior vice president in 1959.

A Citizen's Duty

Roger Lewis Urges All to Vote

Elections in America are always important because this nation rests on a base of participation by citizens in public affairs. The forthcoming elections are of particular importance because of the challenges that have been made to this system.



Roger Lewis

Strident voices have been raised in protest against policies, practices and — indeed — against the whole notion of participatory democracy. This makes it especially urgent that all citizens who believe in this system participate in it.

I urge you to engage in this year's election at both state and local levels to the fullest extent possible. At the very least, I would hope that every eligible voter will exercise his voting franchise this year. Wherever possible, each of us should decide on the issues and candidates that he favors and work in campaigns for those causes.

This company does not, of course, engage in partisan activities on behalf of any candidate. But, the freedom that allows us to live and work together in harmony depends, in large measure, on involvement in the political system. There appears to be a clear danger that emotional and irresponsible appeals could warp our system unless we transform voter apathy into active citizenship.

I urge all of you to vote in these elections and to urge your fellow workers and neighbors to do the same.

ROGER LEWIS
President, General Dynamics

SERVICE LAUREL—Dalton B. Suggs, left, a senior design engineer in Dept. 988-2, receives 35-year pin from L. C. Josephs, Convair Aerospace-SD general manager. Suggs, now handling design task for Improved Centaur, joined company in 1935 and has had design and project engineering responsibilities on Atlas and aircraft programs ranging from B-24 and PBY to F--111 and DC-10. One of his most unusual tasks was design and installation of a rig for tethered flight test of the Pogo XFY-1 in a dirigible hangar at Moffett Field.

'Shuttle' Study Details Given For Rees, Staff

A comprehensive report on space shuttle booster work by Convair Aerospace-SD. was presented Oct. 16 for Dr. Eberhardt Rees, director of NASA's Marshall Space Flight Center, at the North American Rockwell plant in Downey.

Others from Dr. Rees' staff attending were Col. Lee B. Jones, director of project management; Dr. W. R. Lucas, director of program development; and O. C. Jean, deputy manager-space shuttle task team.

NASA-Marshall will be contracting agency for design, development, and test of the planned space shuttle booster.

Convair Aerospace-SD representatives at the combined presentation with North American Rockwell included Lyman Josephs, vice president and general manager; Dr. Donald Dooley, vice president and space shuttle program manager; Richard Keehn, assistant program manager-engineering; L. E. Lightbown, subsystems engineering manager; and Don Fagan, manufacturing director.

The division also had a display on its space shuttle related work for review.

Areas covered and individuals handling display input included: description and major issues, Robert Lynch; structures, composites, and thermal protection system, Fritz Krohn; mechanical, Lightbown; manufacturing, Fagan; non-destructive testing, Dave Gorham; aero/thermal heating, Sterling Starr; avionics, Carl Grunsky; and operations and maintainability, Ray Soper.

A first-quarter review of Convair Aerospace-SD Phase B study activity on the space shuttle booster was presented Oct. 13 by Dr. Dooley at NASA-Houston. Similar presentations were scheduled later for selected personnel at NASA-Marshall, NASA-Langley, and Cape Kennedy.

Included were details on studies of booster vehicle configurations, manned vs. unmanned craft, recovery modes, flight options, reentry, fuels, engine and vehicle integration, mass properties, flight characteristics, structures, propellant subsystems, and propulsion and other subsystems.

North American Rockwell officials gave presentations on space shuttle orbiter vehicle configurations, the combined vehicle system, ground operations and test, mission requirements and operations, and cost reduction objectives.

VE FOR A-X—Members of Convair Aerospace-SD value engineering workshop gathered early this month to review findings. One-week workshop was initial value engineering effort for proposed A-X aircraft.

Forty Apply Value Engineeering Principles to A-X Proposal

Nearly forty Convair Aerospace Division men recently attended a "first of its kind" value engineering workshop aimed at applying VE principles to the proposed A-X aircraft.

The unique VE workshop was conducted over a one-week period rather than the usual two-week session. Teams, comprised of members of the A-X team not having previous VE exposure, worked from the A-X proposal with no hardware, drawings, or firm cost information.

An illustrated presentation on each team's effort climaxed the project. Group spokesmen identified the basic and secondary functions of their projects, described what was necessary to perform the function and outlined how unnecessary costs could be eliminated.

Everett Lindem of educational services was instructor and workshop coordinator. Project leaders were D. L. Hobart, R. L. Trussell, and H. W. Callihan of Dept. 532; G. C. French of Dept. 545.

Participating in the workshop were:

Team 1, flight control tab assemblies—S. E. Aldridge, Dept. 584; D. H. DeMarce, 531; G. M. Graham, 149; E. F. Gurling, 401; C. A. Wright, 533.

Team 2, nose landing gear doors—R. E. Bowman, Dept. 031; A. M. Hill, 511; R. E. Johnston, 588; E. H. Price, 585; John Zathan, 860.

Team 3, speed brake—E. C. Lauderman, Dept. 583; R. R. Romanowich, 531; J. R. Spurgeon, 561; D. S. Whetstine, 015; A. J. Woods, 400.

Team 4, control rod assemblies—G. I. Baxter, Dept. 491; George Durland, 149; R. J. Elling, 512; S. H. O'Leary 533; Karl Taylor, 584.

Team 5, pilot ingress/egress—H. S. Arneson, Dept. 511; T. E. Barker, 810; L. D. DeNooyer, 511; C. W. Pharis, 031; H. M. Stocker, 533.

Team 6, exterior light systems—J. M. Guess, Dept. 031; R. M. McGregor, 533; R. R. Parga, 545; J. C. Ramsey, 583.

Team 7, engine pylon structure—E. J. Beveridge, Dept. 545; E. A. Kops, 532; Bill Luffe, 031; J. G. Moe, 400; J. W. Wohlwend, 513.

Team 8, engine bleed air duct supports—Bill Arends, Dept. 031; Mike Chakarun, 001; J. A. Malthaner, 532; R. D. McLeod, 511; Jack Stitt, 587.

Safety Engineer Earns Certificate

Jim Cooper, a safety engineer in Convair Aerospace-SD's Dept. 130-8, has been named a "certified safety engineer" by the national Board of Certified Safety Professionals.

Cooper was one of the first 200 safety engineers in the U.S. to receive such certification and was believed to be the first from General Dynamics.

An employe of Convair Aerospace-SD and its predecessor organizations since 1942, Cooper has been active in the San Diego chapter of the American Society of Safety Engineers and was a charter member and first treasurer of that organization

Linguists Sought To Assist Library

Convair Aerospace-SD libraries are seeking names of personnel who may be called on to translate correspondence and technical reports and articles from foreign languages.

Keith Blair of library information and service (Dept. 524-1) said requests are received for translations each week and there is a need to build up the current register of translators.

Personnel proficient in foreign languages are asked to phone Blair at ext. 3764 KM or send a memorandum to the library office, mail zone 524-10.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Oct. 16 and Oct. 31.

THIRTY-FIVE-YEAR: Dept. 031, Harold K. Parsons; 195, Walter W. Whittier.

THIRTY-YEAR: Dept. 001, W. W. McDaniel; 002, E. D. Fountain; 019, A. P. Salazar; 031, H. D. Reyenga, W. E. Ritter; 053, C. L. Jackson; 130, H. M. Rubin; 140, P. H. Whitlock; 223, G. A. Clauder, F. Hockenberger; 400, P. M. Castillo; 401, R. W. Fitzgerald; 403, H. J. Sumner; 452, J. H. Weiland Jr.; 509, G. E. Trimlett; 511, P. F. White; 514, R. J. Chillo; 545, F. A. Pokorny; 567, W. F. Brown; 569, S. T. Wood; 587, D. E. Diller; 759, D. J. LaBorde; 761, R. L. Robinson.

TWENTY-FIVE-YEAR: Dept. 002, L. Neal; 027, J. T. Hobbs Jr.; 222, M. W. Rhea; 491, C. P. Rolla.

TWENTY-YEAR: Dept. 001, V. E. Poquette; 002, E. G. Dyson; 027, E. L. Dunscombe, W. E. Pope; 110, C. W. Blakey, T. O. McMaster; 148, C. L. Marks; 149, J. R. Dressler, W. L. Ryan; 170, Beatrice S. Levenson; 195, R. P. Botsford; 202, W. L. Carr; 220, Arlene R. Young; 224, Allethia C. Larsen; 228, Blanche C. Seiler; 250, F. D. Froggatte, W. F. Wilkinson; 420, E. D. Bryans, W. P. Engelfried Jr.; 516, W. F. Carter; 518, Frances M. Clausson, Lola W. Wright; 524, Deloris S. Meredith; 565, Opal B. Brower, J. C. McBratney; 566, Azael Uranga; 572, L. D. Girton; 575, R. M. Bloom, M. I. Edelstein; 579, W. A. Smith; 761, G. E. Wilson; 842, Beatrice G. Phillips; 950, S. B. Chamberlain; 951, M. H. Scott Jr.; 953, C. R. Bowman; 956, W. R. Forsyth.

FIFTEEN-YEAR: Dept. 015, F. Campos, E. C. Wittrock; 101, T. E. B. Vance; 131, J. G. Card; 142, J. W. Schlentz; 144, A. E. Maier; 229, J. D. Bennett, Pattie G. Braswell, Glenora B. Richardson; 250, E. F. Reynolds; 400, R. F. Wood; 511, S. D. Zulio; 545, H. D. Jeter; 565, K. Easland; 574, W. D. Thompson; 756, W. C. Barton; 780, J. H. Miller; 800, R. N. Babcock, 840, G. L. Cooper; 842, J. F. Meeker Jr.; 985, J. C. Erickson, V. Hicks, D. C. Worsnup; 988, G. W. Norris Jr.

TEN-YEAR: Dept. 015, E. Purkiss; 046, F. P. DeNardo; 057, R. W. Duncan; 101, Marion K. Armstrong; 140, C. L. Amaral; 148, Helen P. Parrish; 195, H. Bowmaster, J. W. Zeszut; 221, J. J. Dolan; 229, Elizabeth M. Fleming; 400, S. J. Berry, Lorraine L. Fleming, Leona I. Harsin; 401, A. L. Canfield, W. L. Wotring; 491, W. M. Walker; 518, Phyllis R. Wright; 572, V. C. Ryser; 578, R. T. Spencer; 731, F. C. Bartie; 780, K. L. Batlien; 810, Marian L. Staples; 954, J. W. Parry; 979, J. A. Mazza; 986, H. D. Nilsen; 988, D. G. Guber.

ELECTRO DYNAMIC

THIRTY-FIVE-YEAR: Dept. 614, Lloyd W. Standley.

TWENTY-YEAR: Dept. 422, J. O. Tollett; 423, K. R. Keef; 424, A. P. Meredith; 614, H. L. Copeland, J. M. Lasley.

FIFTEEN-YEAR: Dept. 612, D. R. Kinnaird; 614, H. A. Vasques.

TEN-YEAR: Dept. 416, W. O. Peterson; 922, R. C. Mansell.

Awards

CONVAIR

Employe Suggestion awards approved for week ending Oct. 9:

A. E. Anderson, Dept. 512-3, $474.70; A. R. Anderson, 027-0, $37.50 (two awards); J. J. Anzalone, 130-1, $30; F. J. Bourgeois, 144-1, $15; O. W. Bruton, 143-5, $15; W. J. Christman, 144-1, $30.50 (two awards); E. M. Clark, 059-3, $165.60; V. E. Cole, 759-0, $15; W. J. Day, 002-0, $7.50; F. O. Edwards, 143-5, $37.90; P. B. Flores, 731-0, $15; R. Gamboa, 002-0, $33.25 (two awards); A. A. Hanks, 027-0, $15; N. J. Harrell, 228-3, $28; D. C. Herstedt, 001-0, $10; E. L. Holtwick, 027-0, $37.40; M. A. Jackson, 046-0, $24.80; V. Jennewein, 840-3, $1,750.90; A. S. Jones, 016-0, $15; C. E. Jones, 401-5, $15; K. K. Jones, 001-0, $10; W. L. Koivisto, 149-6, $36.20; G. N. Longfellow, 027-0, $37.50 (two awards); E. M. Myers, 149-5, $8.25; C. A. Nelson, 002-0, $7.50; L. R. Nowlin, 953-1, $191.80; W. V. Peed, 143-5, $15; R. R. Reekers, 143-1, $15; N. E. Rodgers, 401-5, $457.75; S. M. Rynearson, 149-1, $22.40; N. G. Schrade, 221-1, $20.30; R. A. Snyder, 780-1, $56.40; R. A. Taylor, 401-5, $457.75; E. L. Thorpe, 780-1, $75.20; F. Wallace Jr., 142-1, $15; E. R. Wheiland, 143-3, $49.10; S. H. Wilson, 149-8, $15; W. J. Wineski, 046-0, $15; J. Zoll, 144-1, $15.

Employe Suggestion awards approved for week ending Oct. 16:

L. S. Addie, Dept. 019-0, $15; M. V. Archibeque, 016-0, $43.10; D. Belchamber, 250-1, $5; O. G. Boles, 019-0, $26.90; W. H. Brown, 015-0, $31.70; J. C. Corman, 744-0, $15; Marywelyne Carson, 149-0, $15; R. G. Damschroeder, 059-4, $434; W. A. Engelke, 250-3, $15; M. C. Escareno, 250-5, $15; O. H. Fritz, 059-5, $51.30; W. J. Gibson, 016-0, $108.20; R. A. Huffman, 015-0, $15; C. W. Jackson, 002-0, $15; M. R. Killion, 780-4, $15; A. S. Lambkin, 019-0, $15.40; Karl Macy, 780-1, $15; R. J. Moe, 454-0, $57.60; M. Nicolet, 250-1, $5; P. G. Nielsen, 170-8, $15; D. R. Noon, 027-0, $15; L. K. Pike, 460-0, $15; R. L. Puckett, 015-0, $67; F. B. Shockley, 143-5, $66; B. Villanueva, 250-5, $15; K. R. Waldrop, 027-0, $22; W. White, 250-1, $5; R. D. Williams, 149-7, $75; J. H. Wines, 027-0, $15.

Rider-Driver

CONVAIR

RIDE WANTED—From 40th and University Ave. to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Phone 282-9654.

RIDE WANTED—Kearny Mesa plant from Datcho Drive, Clairemont, 7:30 a.m. to 4:15 p.m. shift; Joseph J. Molter, ext. 3674 KM or (home) 273-5375.

Retirements

CONVAIR

KUEHNI—Sarah G., Dept. 016-0. Seniority date June 16, 1950, retired Oct. 16.

KUNTZE—Herbert O., Dept. 756-0. Seniority date July 11, 1956, retired Oct. 16.

McCLEARY—Lyda S., Dept. 820-0. Seniority date July 28, 1960, retired Sept. 30.

SHIPMAN—Ada M., Dept. 840-2. Seniority date Sept. 17, 1943, retired Oct. 9.

SULLIVAN—Thomas J., Dept. 954-3. Seniority date Oct. 29, 1953, retired Oct. 16.

WHITE—Ethel H., Dept. 832-3. Seniority date Feb. 2, 1952, retired Oct. 16.

Personals

CONVAIR

I would like to say thank you to all the wonderful employes in graphic reproduction who generously donated clothing and household items to families who were victims of the Jamul fire.

Mrs. Liz. Kennedy

* * *

I want to express my appreciation to all my friends for the flowers and cards during my recent surgery and hospitalization.

Chique Stieringer
Dept. 202-3

* * *

On behalf of the hundreds of families who suffered such tragic loss in the recent San Diego area fires, our deepest thanks for the generous help provided by Stromberg DatagraphiX, Convair Aerospace and Electro Dynamic employes.

The enormous task of rebuilding and rehabilitating has only just begun and we are deeply grateful for the resources such as yours which have been made available.

You may be sure your help is greatly appreciated and will be administered wisely in providing maximum benefits where they are most needed.

Crest Community Center
for fire victims

Deaths

CONVAIR

JONAS—Christine, retired Dec. 1964, Dept. 835-1, died Oct. 11.

LEET—Ralph W., retired May 1959, Dept. 25-9, died Oct. 6.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair Aerospace editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P. O. Box 1950, San Diego 92112.

Savings Stock Plan Decisions are Near

(Continued from Page 1)

Corporate vice president, explained.

"One of the most important functions of the Plans is to provide the opportunity for and to encourage savings," Hendrix said. "However, there are times when it is necessary to take advantage of those savings, whether for college expenses, repairs or enlarging a home. For members without strong immediate demands and with an eye to retirement or preparing for a rainy day or future emergencies, there may be many personal reasons and certain tax advantages to consider with deferral. General Dynamics makes no recommendation one way or another. It's your personal choice and the decision must be your own."

Invention Disclosures

CONVAIR

SCHRADE—N. G., Dept. 221-1; toolpaint masking of threads.

SIMSON — A. K., Dept. 589-0; nonlight emitting display.

CAMPBELL—S. A., Dept. 584-0; turbo-electric engine system.

SLYSH—P., Dept. 952-5; solar actuator engine.

BUDZINSKI—E. S., Dept. 031-0; E-Z read gage.

HOLLMANN—M., Dept. 962-8; differential control head for the autogyro.

ULERY—L. L., Dept. 027-0; feet comforters.

NEW ADDITION—Convair Aerospace-SD was awarded another star for "outstanding participation" after recent U.S. Savings Bonds campaign. L. C. Josephs, Convair-SD vice president and general manager, adds symbolic star presented by Oscar S. Fuquay, right, Savings Bonds Division area manager, while Paul Allgire, Convair-SD Bonds drive chairman, holds Minuteman Flag. Over 90 per cent are buying bonds through payroll deduction at Convair-SD.

COMPUTER GRAPHICS—Ken Bonine, left, interactive graphics project leader for Convair Aerospace-SD, and Mike Cronk, senior structures engineer, show General Dynamics Structural Dynamics Panel how technique was used in A-X aircraft proposal development. Light pen is used to manipulate and change image being generated by computer. Below at panel meeting, from left: Mike Pakstys of Electric Boat, Carl Riparbelli and Dave Underhill of Electro Dynamic-Pomona, Des Pengelley of Convair Aerospace-SD, George Lasker of Electro Dynamic-Pomona, and Merle Allen of Convair Aerospace-FW.

New Dynamic Analysis Technique Demonstrated for Corp. Panel

Recently acquired capabilities in three-dimensional structural dynamic analysis and computer graphics were discussed and demonstrated at a meeting of General Dynamics' Structural Dynamics Panel Oct. 7 and 8 at San Diego.

Convair Aerospace-SD was host. Panel members present were Merle Allen of Convair Aerospace-FW, Mike Pakstys of Electric Boat, Dave Underhill of Electro Dynamic-Pomona, and Des Pengelley of Convair Aerospace-SD.

Accomplishments in three-dimensional structural dynamic analysis were described by Pakstys, Allen, George Lasker of Electro Dynamic-Pomona and Roger Gieseke, Bill Kittle, and Bob Reynolds of Convair Aerospace-SD. Progress in use of NASTRAN, a new NASA program, in Fort Worth and San Diego was discussed.

Computer graphics presentations were given by Ken Bonine and Mike Cronk of Convair Aerospace-SD. Bernie Kuchta and Dick Huntington, also of Convair Aerospace-SD, gave a rundown on space shuttle activities with emphasis on structural dynamic problems.

Magnuson Elected President Of National Mgt. Association

W. E. "Wes" Magnuson, a 30-year General Dynamics employe and chairman of the Convair Aerospace-SD Craftsmanship program, last week was elected president of the National Management Association at its annual meeting in Chicago. A unanimous vote was cast after initial balloting.

The first General Dynamics man to head the 90,000-member organization, Magnuson also has been active in NMA at local, regional, and national levels for 30 years. He was national secretary-treasurer in 1953-54.

Magnuson joined the former Vultee Aircraft Co. in 1940 as special assistant to the factory manager and became factory manager four years later.

He served as superintendent of the experimental department and as superintendent of fabrication from 1945 to 1956 at Fort Worth on the XB-36, B-36, and B-58 programs.

Magnuson came to San Diego in 1956 as manager of the Fort Worth resident office for the F-102 and F-106 programs and was appointed chief of customer training for Atlas weapons systems missiles in 1960.

He was appointed chief of technical data for the former Astronautics division in 1953 and later chief of publications quality assurance before being named chief of special projects in reliability control and establishing the "Do Good Work" program, forerunner to the current Craftsmanship program, in 1964.

The division holds five Department of Defense Zero Defects program awards and is being considered for its third Sustained Craftsmanship award.

A widely known public speaker, Magnuson has discussed the Craftsmanship award program and Zero Defects concepts at meetings attended by more than a half-million people in cities throughout the United States during the past six years.

International Group Honors Dr. Mueller

Dr. George E. Mueller, senior vice president of General Dynamics, received the Eugen Sanger Medal at the International Astronautical Federation's 21st Congress, Constance, West Germany.

Before joining General Dynamics last December, Dr. Mueller was associate administrator for manned space flight, National Aeronautics and Space Administration. In that capacity he was responsible for the planning and execution of NASA's manned space flight program, including manned landings on the moon.

Eugen Sanger was an Austrian rocket engineer best known for his pioneering studies of rocket-powered aircraft and high-altitude aerodynamics.

General Dynamics is an Equal Opportunity employer.

F-111 Called Pioneer Of Swing-Wing Concept

The F-111 has pioneered and proved the swing-wing concept for mass-production, operational aircraft, and it has an outstanding safety record.

Lt. Gen. James T. Stewart, commander Aeronautical Systems Division, Air Force Systems Command, made these observations in a talk to the National Guard Association recently in New York.

"I flatly assert," General Stewart said, "the F-111 is a good airplane. It has more fighter-attack capability for all-weather deep interdiction than any other airplane in the U.S.—now, and for the next several years to come.

"It has been structurally proof-tested in more detail and degree than any airplane ever built in this country."

General Stewart said the Air Force knew the cause of the in-flight wing failure of an F-111 last December "within a few days." The decision was made shortly thereafter to subject the aircraft to the rigorous proof-testing program.

"It is my personal opinion," General Stewart said, "that almost any other country — and, perhaps, this country, if it had been another airplane of a more conventional design—would, once they determined what had happened and the probability of recurrence, have been less conservative and continued building and flying the F-111 without further ado.

"The F-111 is a safe airplane. It has the best safety record of any supersonic fighter ever built in this country at a comparable point in its life span."

General Stewart said reduced quantities and the number of different models—plus stretched-out production—has been largely responsible for cost growth.

"You may recall," he said, "that the Defense Department started out to build several thousands F-111s in two versions . . . the Navy dropped out . . . and instead of thousands, only hundreds of F-111s are being built.

"Instead of two models, there are a total of seven—including several for the Tactical Air Force; the FB-111 for Strategic Air Command; and a few F-111Bs built for the Navy. The production rate is much less than originally planned. These factors will add up to an inevitable cost growth.

"And, finally, less-than-perfect cost estimates and inflation have contributed their share."

ADVOCATE — Lt. Gen. James Stewart, USAF, commented on F-111 recently.

British 'Shuttle' Men Briefed in San Diego

Six members of the British Aircraft Corp. space shuttle team visited Convair Aerospace-SD last Wednesday (Oct. 21) for a briefing on the space shuttle program.

They were David Farrar, director-space shuttle; Brian Raybould, team leader-overall systems; John Bircham, electronics; Donald Matthews, aerodynamics; and Keith Rowland and Dr. Roger Wyse, structures.

Graduating Class Reminded Of Elders' Accomplishments

(Following is excerpted from an address to the graduating class of Pennsylvania State University by its president, Dr. Eric A. Walker, who is also a director of General Dynamics).

I'd like to share some facts with you about the two most recent generations — your parents and grandparents.

These are the people who within just five decades—1919 to 1969—have by their work increased your life expectancy by approximately 50%—who, while cutting the working day by a third, have more than doubled per capita output.

These are the people who have given you a healthier world than they found. And because of this you no longer have to fear epidemics of flu, typhus, diphtheria, smallpox, scarlet fever, measles or mumps that they knew in their youth. And the dreaded polio is no longer a medical factor, while TB is almost unheard of.

Let me remind you that these remarkable people lived through history's greatest depression. Many of these people know what it is to be poor, what it is to be hungry and cold. And because of this, they determined that it would not happen to you, that you would have a better life, you would have food to eat, milk to drink, vitamins to nourish you, a warm home, better schools, and greater opportunities to succeed than they had.

And because they were materialistic, you will work fewer hours, learn more, have more leisure time, travel to more distant places, and have more of a chance to follow your life's ambition.

These are also the people who fought man's grisliest war. They are the people who defeated the tyranny of Hitler, and who, when it was all over, had the compassion to spend billions of dollars to help their former enemies rebuild their homelands. And these are the people who had the sense to begin the United Nations.

And they made a start — although a late one—in healing the scars of the earth and in fighting pollution and the destruction of our natural environment. They set into motion new laws giving conservation new meaning and setting aside land for you and your children to enjoy for generations to come.

While they have done all these things, they have had some failures. They have not yet found an alternative for war, nor for racial hatred. Perhaps you, the members of this graduating class, will perfect the social mechanisms by which all men may follow their ambitions without the threat of force—so that the earth will no longer need police to enforce the laws, nor armies to prevent some men from trespassing against others.

But they—those generations—made more progress by the sweat of their brows than in any previous era, and don't you forget it. And, if your generation can make as much progress in as many areas as these two generations have, you should be able to solve a good many of the world's remaining ills.

DR. ERIC A. WALKER

High Velocity Meteoroids and Bullets Simulated in 35-Foot Laboratory Gun

A light-gas gun capable of launching a projectile up to 10 times faster than a high-powered rifle can fire a bullet is operational at Fort Worth.

The 35-foot gun has a wide potential range of uses, from simulating the effects of high velocity meteoroids on spaceships to the effects of bullets on a supersonic aircraft's gas tanks.

Here's the way it works:

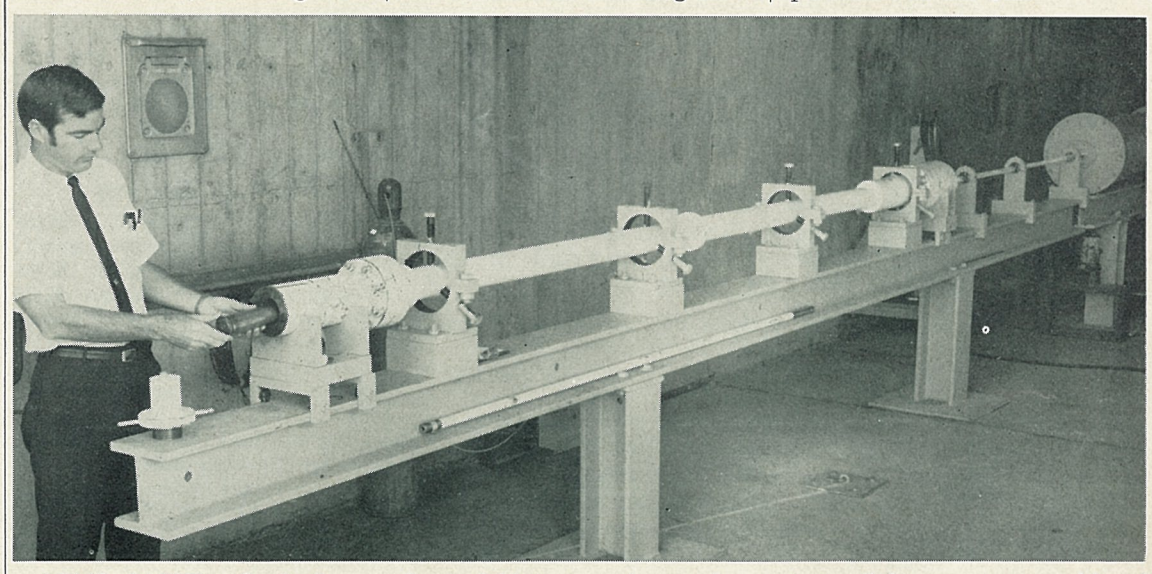
A .40 mm antiaircraft shell is fired in one end, launching a six-inch long piston through a pumping tube filled with hydrogen. The compressed hydrogen activates a projectile (up to .04 inches in diameter), which travels at 30,000 feet a second.

The fast moving projectile enters a 10-foot long vacuum chamber at the other end of the gun, slamming into the desired test specimen.

In one test, engineers used a small plastic-like pellet to simulate a meteoroid smashing into a spacecraft panel. In another, they analyzed the possible effects of a moving object against a plane traveling at hypersonic speed.

"The gun has many potential uses," says G. R. Brown, Dept. 064 test engineer who helped develop it, "and we're interested in cooperating with interested parties."

Brown said that perhaps fewer than half a dozen such guns are operational in the U.S.



LONG BARREL—G. R. Brown, Dept. 064 test engineer, demonstrates light-gas gun capable of firing objects at 30,000 feet a second.

RANGE CRAFTSMANSHIP—Orion Reed, Convair Aerospace operations manager at Eastern Test Range, fourth from left, and his staff display Craftsmanship award for "sustaining performance and meeting quality objectives" during six-month period. From left are M. F. Tooley, T. A. Bianchi, Dan Sarokon, Reed, Q. E. Gilmore, R. D. Beasley, and T. C. Chitty.

Dependents Medical Premiums Will Be Fully Paid for Hourly

Almost all hourly employes of Convair Aerospace-SD will have premiums for their dependents medical insurance fully paid by the company by next August.

Paul Allgire, chief of employe benefits, said company payment of the $2.93 weekly premium will represent an annual increase in take-home pay for hourly employes of $152.36 annually.

Effective date of the new benefit varies according to the bargaining unit representing the individual.

Non-represented hourly employes and those represented by the International Association of Machinists had the company-paid dependents insurance premium become effective Oct. 11 and reflected in checks received last Friday (Oct. 23).

Effective dates for others, listed by bargaining unit, are International Brotherhood of Electrical Workers, Nov. 1; Engineers and Architects Association, Nov. 15; International Alliance of Theatrical Stage Employes, Nov. 22; United Association of Plumbers and Pipefitters, Dec. 4; and United Plant Guard Workers, July 25, 1971.

Eligible hourly employes who do not have but wish to obtain dependents medical insurance may obtain application forms through employe benefits offices.

Company-paid premiums for dependents of salaried employes became effective with the payroll period beginning Sept. 28 **(GD/NEWS, Sept. 16).**

SCHNEIDER WINS AGAIN IN PISTOL CLUB CONTEST

Red Schneider fired 291 for master honors in CRA Pistol Club's .22 police course shoot Oct. 11. Charlie Kropp was first in expert class with 287 and Jim Thomas took sharpshooter honors at 194. Jerry Lehrer and Schneider were first and second, respectively, in .22 short national course competition with 278 and 276 totals.

Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, Nov. 14. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. Also not permitted are canvas or open-toed shoes and bare feet.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—Some drafting personnel do not have experience in printed circuit requirements. Could educational services provide training?

A—Local community colleges are being contacted to see if such is already available and if not educational services will look into the possibility of establishing an in-plant class. A minimum of 20 students would be necessary to justify.

★ ★ ★

Q—Areas around vending machines in some cases are unsanitary and waste food attracts flies. Can anything be done?

A—The vending contractor has been notified and corrective action will be taken. If such conditions persist in your area, call KM 1111.

★ ★ ★

Q—Morning traffic is snarled in the vicinity of Gate 5, LF plant, in part because cars attempting to reach Lot 11 are delayed by pedestrians crossing in front of them. Couldn't a guard help speed the flow?

A—Normally, a guard does perform this service, but occasionally is called away for more urgent duty.

★ ★ ★

Q—I see male employes in the factory with long hair, working around moving machinery. Isn't this dangerous?

A—It certainly can be. Supervisors and safety engineers continually inspect work areas with an eye to such hazards and each case is studied separately, considering length of hair, type of machine and proximity to moving parts. Regardless of sex, employes are required to trim their hair or wear approved protective coverings when a danger exists.

Gardeners Set For Fall Show

CRA Garden Club invites all General Dynamics families to participate in the annual Fall Flower Show, either as exhibitors or spectators. The event will be open to the public free of charge from 1-6 p.m., Nov. 1, in the Floral Association Bldg. Balboa Park.

The popular showing will feature chrysanthemums, roses, arrangements, corsages, potted plants and childrens categories. Additionally, a special exhibition of canned fruits, vegetables, jams, jellies, preserves and relishes will be on display.

Contest rules are minimal—all flowers entered must have been grown by the exhibitor and entries must be received by 11 a.m. the day of the show. Entry forms are available at all Convair Aerospace-SD employe benefits outlets. There will be no entry fee.

Turkeys will be awarded to best of show entries and merchandise awards will go to all first through third place winners.

Thomas and Zeich Dominate Shooting

John Thomas and Dick Zeich dominated CRA Rifle Club's annual championship matches Oct. 11 at the Gillespie Field range.

Thomas, who wound up high aggregate winner, took firsts in sitting and kneeling events, a second in prone and a third for offhand position while Zeich won prone and offhand events and was runner-up in sitting.

Dick Greer was second in kneeling, Nick Kourbelas second in offhand and Bob Buechner third in prone, sitting and kneeling categories.

In IRC small bore rifle competition the same day, the Convair team of Greer, Zeich, Thomas and Bob Kastilahn placed second.

Stamp Club Begins Exchange Program

CRA Stamp Club has initiated a new club-to-club stamp exchange program with other stamp clubs throughout the United States.

The exchange program is designed to afford members the opportunity to enhance their collections through use of duplicate stamps in their possession.

Information on the new program will be discussed at club meetings held in the CRA Clubhouse the second and fourth Thursdays of each month. All General Dynamics stamp enthusiasts are invited.

Turk Murphy Due For Jazz Concert

Turk Murphy and his San Francisco Jazz Band will be featured in a 5½-hour dance concert to be sponsored by Convair Recreation Association and Convair Aerospace-SD Management Association at 8:30 p.m. Nov. 20 in the Crown Room of the Hotel del Coronado.

Murphy and the band play New Orleans style Dixieland music with Pat Yankee as featured vocalist.

Tickets are $5 each and are on sale through all CRA and employe benefits outlets and through Management Association boosters.

Hockey Tickets Offered at Saving

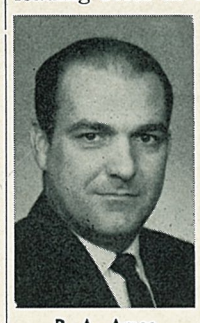
Convair Aerospace-SD's Management Association has tickets for five San Diego Gulls home hockey games at $2.25 and $2.75 (a 75-cent saving). The games will be with Seattle, Nov. 7; Portland, Dec. 12; Phoenix, Jan. 1; Denver, Feb. 12; and Salt Lake City, March 20.

Tickets may be purchased at employe benefits offices, the CRA Clubhouse, the Management Association office at Kearny Mesa, or the vendor's lobby in Bldg. 5 at Lindberg Field. Phone N. B. Powell Jr., ext. 694 LF, for additional information.

CERTIFIED—Robert J. Bordelon, having completed his apprenticeship, received journeyman certificate recently from J. M. Adamson, Convair Aerospace director of manufacturing-SD. Bordelon received his associate in science degree from San Diego Community Colleges in June. He has been assigned as a tool and die maker A.

Convair Aerospace Estimators Have Lead Roles in NES Seminar

Several Convair Aerospace-SD estimating personnel will have leading roles in the first national estimating seminar to be held Nov. 7 by the National Estimating Society at United States International University's California Western campus in San Diego.



R. A. Ames

Robert A. Ames, president of the national society and supervisor of operations estimating Dept. 195-3, will give the keynote address at the seminar, which will have "Advanced Estimating Professionalism" as its theme.

Claud Leis, president of the San Diego NES chapter and senior cost estimator in Dept. 195-5, will give the welcoming address. Richard H. McManus, senior estimator in Dept. 195-3, is national program director and Art Wrightson, a senior price estimator in Dept. 195-0, is seminar program chairman.

Two Convair Aerospace-SD men will be among seminar speakers.

Harry Trelease, a design consultant in Dept. 588-0, will discuss "Estimating advanced design by computer." Leland E. Bolt, a design specialist in Dept. 589-2, will cover "Life-cycle cost estimating."

Other speakers will include Prof. Darris C. Richardson of McDonnell Douglas Corp., Charles A. McMahon of Trepte Construction Co., and Malcolm Sherman of Harbridge House Inc. of North Hollywood.

Interested individuals in estimating and other cost-oriented professions have been invited. Reservations close Nov. 2. Details can be obtained by calling ext. 1730 KM.

The National Estimating Society was founded in 1966 in San Diego and now has other chapters in Colorado and Florida and delegates-at-large in the Los Angeles and Seattle areas.

The current membership of more than 300 includes estimating specialists from manufacturing, quality control, engineering, tooling, material, program estimating, and other fields.

Linkswomen Slate River Valley Play

General Dynamics linkswomen have scheduled a Nov. 14 tourney over the River Valley course.

In the October tournament on Balboa Municipal links Dorothy Johnston carded a net 71 to take top honors. Agnes Sliger, with net 75, was runner-up and Freda Margargal took third one shot back.

May Dean Schell took the special prize "par shooter" award and Jeannine Letzring and Agnes Sliger won golf ball door prizes.

San Diego AIAA Section Winner

The San Diego section of the American Institute of Aeronautics and Astronautics (AIAA), which has many Convair Aerospace and Electro Dynamic Division personnel among its 650 members, was selected for the 1969-70 "outstanding section award" for sections of more than 500 members.

William F. Chana, a member of the Convair Aerospace marketing analysis and planning staff (Dept. 102-0) and chairman of the AIAA section during the year for which the award was made, received the award at an honors banquet last week in Houston, Texas.

The banquet was held in conjunction with the AIAA's seventh annual meeting and technical display.

Chana said selection of the San Diego section for the award was based on its outstanding management, membership, programs, awards and honors, communication, education, and student affairs activities.

Other Convair Aerospace personnel with key section positions during the year were Thomas F. Leech, secretary; James B. Robinson, long-range planning chairman; John M. Wild, technical activities chairman; James H. Mason, programs chairman; and Fred C. Porter, publications chairman.

* * *

Dr. George E. Mueller, General Dynamics senior vice president, served as chairman for a session on "International Cooperation in Space: Choice or Necessity?" at the AIAA annual meeting Oct. 19-22 in Houston.

General Dynamics' Corporate exhibit at the related technical display featured work on the F-111, the space shuttle booster, experiments modules, Atlas-Centaur and Titan-Centaur launch vehicles, and Centaur delivery by space shuttle orbiter. A 15-foot self-erecting antenna was placed above the exhibit in the Astrohall.

Three Convair Aerospace men presented papers at the meeting. They are B. F. North of Dept. 584-0, John M. MacDonald of Dept. 501-1 and W. J. Ketchum of Dept. 952-5.

'Ghosts' on Ice For Skate Event

CRA Ice Skating Club will get Halloween off to an early start with a costume party at 6:15 p.m. tomorrow (Oct. 29) in the House of Ice for "witches, goblins, ghosts, and all kinds of cats."

Those in costume will be admitted free and skates are available for rent at 50 cents. Guests accompanying regular club members will be welcome.

There will be games for children and juniors with prizes for winners and best costumes. Refreshments will be served at the close of the private skating session.

Bud Davies, commissioner, said classes and private instruction will be cancelled at tomorrow's session only to permit use of the full rink for the party.

Club membership is available for division families at $1 per year and can be arranged at any of the 6:15 to 7:45 p.m. Thursday skating sessions. Free instruction and reduced admission rates are included.

Radio Club Aids With Scout 'Calls'

CRA Radio Club's amateur station W6UUS hosted 15 scouts for talks with scouts in distant areas during a "Scout Jamboree on the Air" Oct. 17 and 18.

First contact was with six scouts at DU3ZAS in Manila, a station operated by an Air Force enlisted man from California.

"A lot of questions were asked and answered after the mike fright subsided somewhat," Alex Halyburton, commissioner, reported. "Among other things, we learned that scouts in different places like much the same things to eat."

CRA amateurs said Cindy Rowe, an Explorer Scout first class and daughter of Dick Rowe of Convair Aerospace Dept. 420-1, was one of the visiting scouts who did an excellent job of communicating. She is studying leadership in a Professional Explorer post.

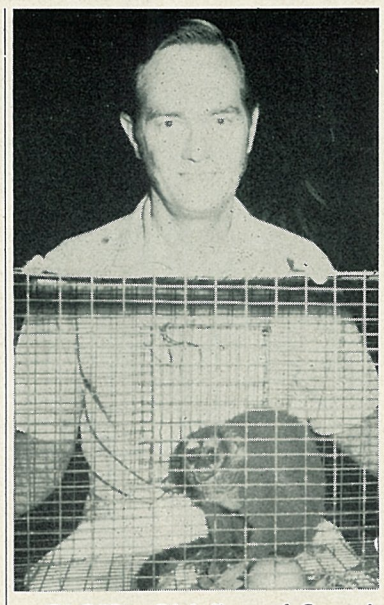
Members assisting at the CRA station were Halyburton, Don Lanthier, Bill Roden, Dale Taber, Paul Crawford, and Red Rush.

Managers Will Map Basketball Schedule

A meeting of team managers planning to participate in CRA Slow-Break and Fast-Break basketball leagues is scheduled for tomorrow (Oct. 29) in CRA Clubhouse.

Plans for the upcoming season slated to get under way the first of December will be discussed at the 7 p.m. meeting. Team rosters will be due at a follow-up meeting Nov. 12.

Both leagues will play at Muni Gym in Balboa Park. Call Pete Beyer, ext. 1111 KM for information.



CAGED—Dick Frey of Convair Aerospace-SD poses with stray douroucouli or "night monkey" that he enticed into cage on roof of his home.

Loose Monk

Trail of Grapes Leads to Trap

Three weeks of evening "monkey business" last month by Dick Frey, senior design engineer in Convair Aerospace-SD's Dept. 962-8, led to entrapment of a douroucouli or "night monkey" that had spent the summer nights scampering along power lines, through trees, an across rooftops in La Mesa.

"It seemed a dirty trick to trap him," Frey said. "But people at the San Diego Zoo and from the Simian Society had told me he was highly susceptable to respiratory ailments and would not be able to survive a winter in the open."

Where the nocturnal douroucouli, also called an "owl monkey," came from had been a mystery to residents of the area. Frey said such primates, natives of South America, are rarely seen in the jungles and are among the cleanest of the monkey family.

Frey got a good look at the douroucouli with a flashlight one night after seeing him come down a phone wire and jump to a eucalyptus tree in his back yard. Then he began putting out food and watching for him each night.

"He really likes bananas and seedless grapes, which he peels before eating, and dry cereals," Frey said.

A trail of grapes across the roof of Frey's home at 4366 Vetter Pl., La Mesa, and into a cage with a spring-loaded door ultimately led to the capture.

The little "night monkey" then was turned over to representatives of the Simian Society for placement in a new home.

Is it news? Pick up a phone and call GD/NEWS

CRA Calendar

(For information on CRA activities CRA headquarters, ext. 1111 KM. Deadline for next issue of GD/NEWS is Nov. 3. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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BADMINTON—Play 7-10 p.m., Mondays, Federal Bldg., Balboa Park.

BASKETBALL—Leagues now forming. Managers meeting Oct. 29 and Nov. 12.

BICYCLE CLUB — Old Town 12-mile ride, Nov. 1; Rancho Santa Fe 25-mile ride, Nov. 14; Romona 50-mile ride, Nov. 28. For information call Bob Williams, ext. 1148 LF.

BONAIR FLYERS — Meet 7:30 p.m., Nov. 12 (note meeting day changed). Canyonlands Tour, Nov. 26-29.

BRIDGE — Duplicate bridge sessions, 7:30 p.m., each Friday.

CAMERA CLUB—Mission Bay Photo Festival Oct. 31-Nov. 1. Meeting Nov. 15.

CERAMICS — Meet 9 a.m.-noon and 7-10 p.m., Tuesdays and Thursdays.

CHESS—Play 7 p.m., Nov. 4.

CHORUS—Rehearsals 7:30 p.m. each Monday.

COINEERS—Meet 7:30 p.m., Nov. 9.

COUNTRY & WESTERN MUSIC — Meet 7:30 p.m., Thursdays.

FENCING—Workouts and instruction 7:30-10:30 p.m., Fridays. YWCA, 10th & C Sts.

GARDEN CLUB—Meeting 7:30 p.m. Nov. 4. Fall Flower Show, Nov. 1. Both in the Floral Association Bldg., Balboa Park.

GOLF — Carlton Oaks tournament, Nov. 21-22.

HEALTH CLUB—Open 9:30 a.m.-10 p.m., Monday through Thursday; 9:30 a.m.-9 p.m., Fridays; 9 a.m.-noon, Saturdays; "women only" weekdays, 9:30-11 a.m.

HI-FI-MUSIC—Meet 7:30 p.m., Nov. 10.

ICE SKATING — Halloween costume party, Oct. 26, during regular GD family skate night 6:15-7:45 p.m. Admission is free for all in costume. Skate rental will be 50 cents.

JUNIOR SCIENCE—Meeting Nov. 6.

MINIATURE RAILROAD — Operating sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions 7 p.m., each Wednesday, CRA Missile Park.

PISTOL CLUB—Shoot 9:15 a.m., Nov. 8.

RADIO CLUB — Meeting 7:30 p.m., Nov. 5.

RIDING CLUB—All Gymkhana show, Nov. 1.

RIFLE CLUB—Senior shoot 7 p.m., tonight (Nov. 28). Junior shoot 9 a.m., Nov. 7. Both at Gillespie Field range.

ROADRUNNERS — Meet 7:30 p.m., Oct. 29, Gillespie Field Clubhouse.

SAILING—Meeting 7:30 p.m. tonight (Oct. 28).

SCULPTURE—Workshop sessions 7:30, Mondays.

SKI CLUB—Ski classes starting, Nov. 1. Meeting Nov. 3, 7:30 p.m., South Bay Club's Recreation Room, on Mission Bay.

SPECIAL EVENTS — Turk Murphy's Jazz Band presents a dance concert 8:30 p.m., Nov. 20, Hotel del Coronado.

SQUARE DANCE — Dance 8-10 p.m., Thursdays.

TOASTMASTERS—Convair club meets 4:30 p.m., Wednesdays. Dynamic club meets 5:30 p.m., Thursdays.

TOURS—Hawaii tours discussed 7:30 p.m., Oct. 29.

TRAILERS—Meet 7:30 p.m., Nov. 3.

WIVES CLUB—Ferrara Winery tour, Nov. 4.

WOMEN'S GOLF—River Valley tourney, Nov. 14.

'Aloha State' Tours Set for Discussion

Four different Hawaii tour "packages" being offered through Convair Recreation Association with weekly departures will be discussed in a meeting at 7:30 p.m. tomorrow (Oct. 29) in the CRA Clubhouse.

Included are:

Waikiki—seven days and six nights in Honolulu, leaving Thursdays, $199.

Aloha State—13 days and 12 nights, leave Thursdays, $299.

Vanda Orchid—13 days and 12 nights, leave Thursdays, $359—or 14 days and 13 nights, leave Saturdays, $399.

Round-trip flights between San Diego and Honolulu by Western Air Lines is included with each.

PROMOTING PENGUIN—Rollie, Sea World's roller skating penguin, demonstrates skill on wheels for Barbara Hastings, left, and Barbara Landrum, both Dept. 780-4 electronics assemblers for Electro Dynamic Division at Kearny Mesa. Rollie made a brief noontime visit to help Convair Aerospace-SD Management Club publicize "General Dynamics weekend" Oct. 24 and 25 at Sea World.

'Dry Land Skiing School' Scheduled For Beginners

Convair-Don Diego Ski Club will present an "introduction to skiing" with two-hour practice sessions on a grassy slope and an artificial snow ski ramp during the next three Sunday afternoons.

Sign-up will be at 12:30 p.m., Sunday (Nov. 1) in front of the Puppet Theatre in Balboa Park. The first two practice sessions will be held in Balboa Park and the third on Nov. 15 on the artificial snow at Stanley Andrews sporting goods store, 6941 Federal Blvd., Lemon Grove.

Joe Harris, club commissioner and director of the school, said instruction will cover selection of proper ski equipment, basic ski techniques, safety, and pre-season conditioning exercises.

Course fee will be $5 and ski equipment will be provided for those who do not already have their own. Wool socks will be needed and women are asked to wear slacks.

A bus trip to Snow Summit at Big Bear has been scheduled Dec. 13 at reduced rates to give novices a day of practice on real snow.

Prospective members are invited to attend club meetings at 7:30 p.m. the first Tuesday each month in the recreation room of the South Bay Club, 3866 Ingraham St., Pacific Beach. Phone Ralph Kiger, ext. 2028 KM, for additional information.

Los Penasquitos Hosts Golfers

More than 140 linksmen turned out for the October CRA Golf Club tourney at Los Penasquitos Country Club.

Glen Gould carded a gross 74 to take Calloway flight honors by three strokes over Art Sharp. John Rock with 71 and John Mellett one stroke back took low net honors.

Other flight winners, each receiving gift certificates were: 1st flight—Bill Bussard - 75, Bob Kaminski - 76, low gross. Harry Bodwell - 62, Joe DeGrazier - 63, low net; 2nd flight—G. Velasquez - 74, Carl Leonard - 75, low gross. Brad Snow - 61, Al Orozco - 61 (matched cards), low net; 3rd flight—Wes Reusch - 78, Hal Allison - 82, low gross. Hal Lambert - 60, Jack Irvine - 62, low net; 4th flight—Lou Springer - 88, Jack Harrison - 88, low gross. Jerry Stephenson - 62, Stan Brown - 63, low net.

Next CRA tourney will be a "turkey shoot," Nov. 21-22, at Carlton Oaks. Starting times will be assigned beginning Nov. 11 by calling KM ext. 1111.

Bicycle Club Slates Rides in November

Three rides have been scheduled for November by the CRA Bicycle Club. On Nov. 1, members will take a 12-mile Old Town ride; a 25-mile jaunt to Ranch Santa Fe, Nov. 14; and a 50-mile Romona tour, Nov. 28.

Riders for the Old Town trip will meet at Robinson's waterfall in Fashion Valley shopping center at 2 p.m., Nov. 1. Ride leader is Myke Dickey, ext. 2993 KM or (home) 274-2442. Tom Lorr, ext. 1846 LF is ride leader for the Rancho Santa Fe tour and Cy Campbell, ext. 1008 LF is in charge of the Romona outing.

TOOLING TOPS—D. D. Dimmitt, left, chief of safety and fire, presents trophy to M. O. Ramsey, Dept. 460, tool service general foreman, at recent safety meeting. Fire inspections conducted at Convair Aerospace-SD during Fire Prevention Week found lowest discrepancy and highest employe fire safety consciousness in the tooling department.

Bonair Flyers Plan Four-Day Thanksgiving Fly-In in Utah

CRA Bonair Flyers have scheduled a four-day "Canyonlands Tour" Nov. 26 through 29 during the Thanksgiving holiday weekend.

George Hazelrigg, president, said the club will fly to Moab, Utah, and use the airport there as a base of operations for both flying and bus tours to see some of the "outstanding scenery" in the area.

Zion National Park, Bryce Canyon National Park, Lake Powell, and the Grand Canyon are among points of interest to be viewed.

Hazelrigg said eight or more planes and at least 20 members of the club will be making the trip. Some plan to camp out in tents and others to stay in a motel in Moab.

Details can be obtained by calling Hazelrigg, ext. 2441 KM, or D. K. Smith, ext. 1223 LF.

Lens Club Members To Assist Festival

CRA Camera Club members will be assisting in the Mission Bay Photo Festival, Oct. 31-Nov. 1, in lieu of the previously scheduled Nov. 1 meeting.

The final quarterly contest for 1970 is planned during the next regular meeting at 7:30 p.m., Nov. 15, in the Photo Arts Bldg., Balboa Park.

Employes interested in Camera Club activities should call Bruce Williams, ext. 3183 KM.

Plum Brook Visitors To See Centaur B-2 Test Tank in Ohio

The Centaur B-2 test tank fabricated earlier this year by Convair Aerospace-SD for NASA's Lewis Research Center will be one of several attractions for visitors at a drive-through open house Sunday (Oct. 19) at NASA's Plum Brook Station near Sandusky, Ohio.

Since delivery to Plum Brook in June, the B-2 tank has been outfitted with engines from the old Centaur 5-C which previously had been used in "hot firing" systems validation tests.

The B-2 now is being used by NASA engineers in the Plum Brook spacecraft propulsion research facility, a large vacuum chamber, in tests to support the D-1 Improved Centaur and other space vehicle programs of the future.

A special welding system developed by Convair Aerospace-SD was used for the first time on the B-2 tank to replace mechanical fittings on pneumatic lines.

Withee, Barlow Take New Posts

W. W. Withee has been appointed program director-experiment module (Dept. 501-0) and M. R. Barlow has been appointed director of advanced systems (Dept. 501-0) for Convair Aerospace-SD.

Both report to R. E. Adams, vice president-research and engineering. Under Barlow's direction are advanced space systems (Dept. 586-0), special structures systems (Dept. 586-1), advanced aircraft systems (Dept. 580-0), and systems analysis (Dept. 589-0).

Patrick J. O'Leary replaced Barlow as manager of program development for launch vehicle programs (Dept. 952-0) and reports to K. E. Newton, director of launch vehicle programs.

Rep. Teague, Others Make Plant Visits

Rep. Olin E. Teague of Texas, a member of the House Committee on Science and Astronautics and chairman of the House Subcommittee on NASA Oversight, visited Convair Aerospace-SD's Kearny Mesa plant Thursday (Oct. 22).

He was accompanied by Rep. Lionel Van Deerlin (D-Calif.) for a brief meeting with division executives and a plant tour with a series of informal briefings.

Other recent visitors to the Convair Aerospace-SD plants included U.S. Senator George Murphy (R-Calif.); David K. Hostetter, 36th Congressional District candidate; and James Kuhn, 37th Congressional District candidate.

Copies of a non-partisan League of Women Voters' Election Extra newspapers, providing information on election candidates and propositions, are available for employes in division libraries.

Mariner Antenna Test Model Checked With AC-23 Centaur

An antenna test model of the 1971 Mariner-Mars spacecraft was mated with the AC-23 Centaur second-stage launch vehicle this month at Convair Aerospace-SD's Kearny Mesa plant for comprehensive radio frequency and electronic compatibility verification tests.

The antenna model, developed by Jet Propulsion Laboratory, contains duplicates of medium, low, and high-gain antennas to be used on the Mariner-Mars spacecraft and has wire mesh simulating solar panels.

Three adapters—two of which will fly on the Mariner missions and another for backup—will be used to verify their interchangeability with both the AC-23 and AC-24 Centaur vehicles.

Bob Benzwi of the Centaur program office said the design verification and compatibility tests with the AC-23 Centaur were conducted to insure proper mechanical fit and that telemetry and radio signals for the launch vehicle and spacecraft are compatible.

Electrical harnesses were connected as they will be in flight for the tests and pyrotechnic systems for release of the Mariners also were tested to verify proper operation and time sequencing.

NASA-Lewis personnel present for the tests were Ed Muckley, Dale Pope, and John Mechvetal. Jet Propulsion Lab was represented by Jim McGee, Tom Shaw, Fred Locatell, and Jewel Beckert. Convair participants were Benzwi, Gerry Christ, Buz Parsons, Ken Odom, and Loren Batchman.

Submarine Flotilla Commander Warns of Soviet Fleet Threat

A warning that by 1974 the Soviet fleet may well have the superiority in seapower to achieve worldwide dominance without firing a shot was issued by RAdm. Oliver H. Perry Jr., Commander of Submarine Flotilla Two.

Admiral Perry said that a continuation of the recent dramatic growth of the Soviet fleet would greatly strengthen their first-strike capability, and quoted Secretary of Defense Laird's warning that by 1974 the Russians could have the capability of destroying 95% of our Minuteman bases.

Seapower will also allow them to prevail in a conventional war at sea, and will serve "as an important element in their equation for world domination," he said.

Speaking at apprentice graduation ceremonies at Ocean Beach Park, Adm. Perry told an audience that included 47 graduates from 11 different shipyard trades at Electric Boat Division that "education has been fundamental to the growth of Soviet seapower . . . particularly in research, marine engineering and naval architecture." He noted that the Leningrad Shipbuilding Institute annually graduates 1,000 naval architects and engineers, contrasted with 400 such technicians from 10 comparable U.S. schools.

"Seapower is, after all," he said, "the expertise and the ability of officers and men to effectively accomplish their missions at sea, whether in war or peace."

The senior submarine officer at the Naval Submarine Base in Groton described the presence of some 30 to 40 Soviet ships in the Mediterranean as "seeking to limit U.S. options and presenting the Sixth Fleet with a sizeable obstacle. As they reduce our influence, they are simultaneously enhancing their own."

The Soviets also operate approximately 40 surveillance ships whose sole mission is to collect intelligence on the U.S. Navy, he noted.

Additionally, Russian merchant ship construction outstrips the U.S. by a 9 to 1 ratio and has now exceeded the 12 million ton mark, the admiral said. "This state-owned and controlled fleet now calls regularly on some 850 ports in about 100 nations."

Admiral Perry pointed out that the Soviet shipyard at Severodvinsk has the capability to produce more submarines annually than all of the U.S. shipyards combined. "In many cases they have obviously attempted to duplicate our design."

Wine Tasting Trip Planned for Wives

Convair Aerospace-SD Wives Club will visit Ferrara Winery in Escondido Nov. 4 for wine tasting and a presentation on the history of winemaking—then will have lunch on their return trip at Lawrence Welk's Mobile Estates restaurant.

Wives will leave CRA Clubhouse at 9:30 a.m. and have been asked to bring cheese and crackers for the wine tasting session. Reservations are not required and prospective new members are invited.

Electric Drive Sub Ordered by Navy

Electric Boat Division has been awarded a $77.9 million negotiated fixed-price contract for the construction of the nuclear-powered (electric-drive) submarine, SSN 685, by the Naval Ship Systems Command.

The division was previously awarded a $30 million design contract for this submarine. The new award brings the combined total to approximately $108 million.

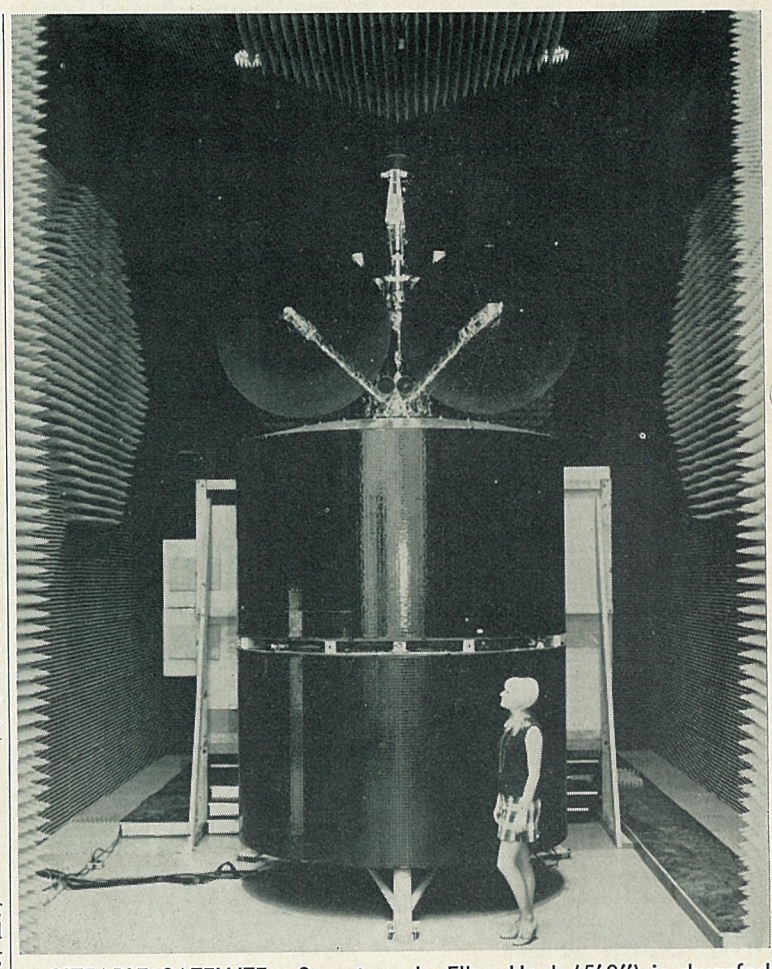
The keel for the electric-drive submarine is expected to be laid next year. While the award will help to stabilize the company's work load, it will not have any significant impact on employment.

Marine Awards Won By Two at Groton

Dr. A. Duncan MacDougall, medical director at Electric Boat Division, and Robert H. Secor, senior chemist at the division, have won awards from the marine section of the National Safety Council for presentations made during the past year.

The awards will be given this week at the Chicago business meeting of the marine section during the Annual National Safety Congress.

Dr. MacDougall will receive the group's Citation Award for his April presentation "Cooperation: Key to 'The Safe Seventies.'" Secor will receive the General Chairman's Award for his paper on "Methods of Handling and Labeling Hazardous Materials."



SIZEABLE SATELLITE—Secretary Jo Ellen Hock (5'2") is dwarfed by 17.6-foot full-scale engineering test model of Intelsat IV satellite to be launched by Convair Aerospace Division's Atlas-Centaur 25. The Intelsat IV, produced by Hughes Aircraft Co., will be capable of simultaneous transmission of 6,000 telephone calls. Erection of the AC-25 launch vehicle was completed late last month by Convair Aerospace personnel at the Eastern Test Range.

Division Gets $17,000 Computer In 'Trade' for Engineer's Program

A computer compiler program developed on his own time by John W. Slattery of Dept. 551-3 has been "traded" by Convair Aerospace-SD to Varian Data Machines Inc. of Irvine, Calif., for a $17,000 Varian 620i computer unit and related teleprinter.

Slattery, a senior electronics engineer with the division since 1966, has been presented a $1,395 Employe Suggestion award representing 10 per cent of the savings expected from first year's use of the computer unit.

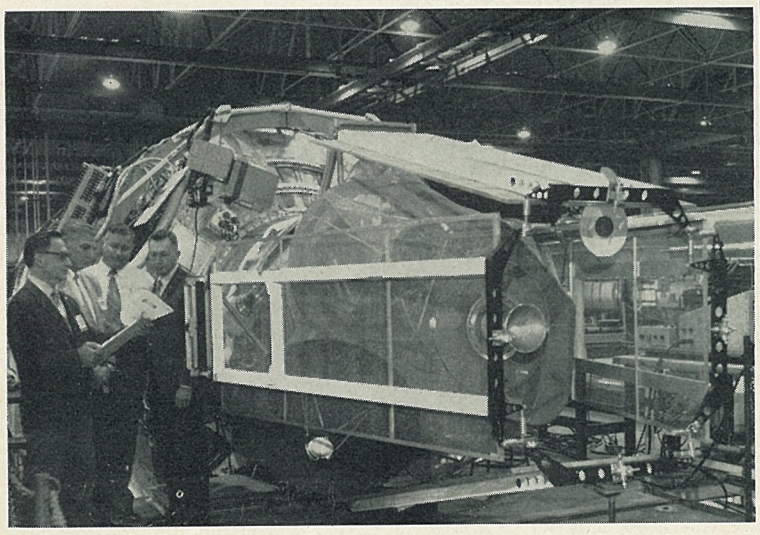
Varian Data Machines officials had planned to buy a program such as Slattery devised for use in demonstrating the 620i's capabilities to potential customers.

The firm offered to "trade" Convair Aerospace-SD the Varian 620i computer and teletype unit in exchange for the right to use Slattery's program.

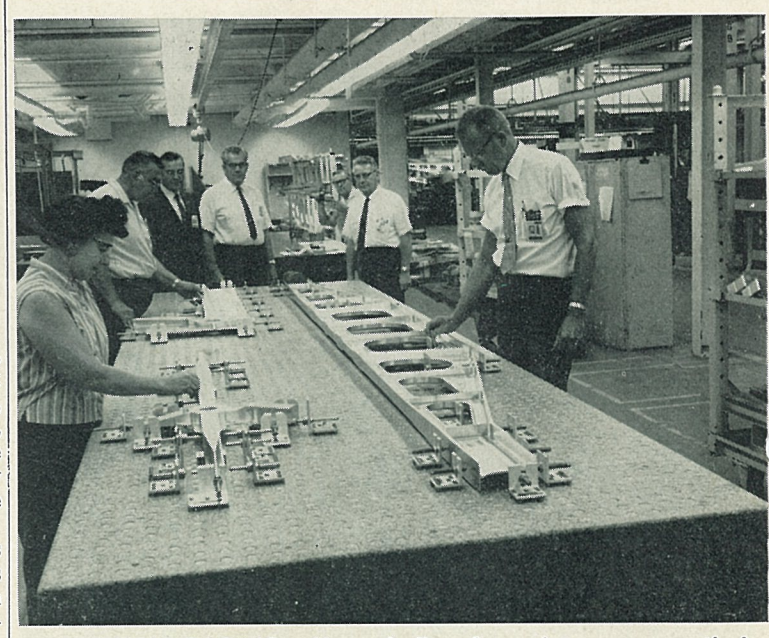
The "bartered" computer is being used by Convair Aerospace on the division's automated control systems and TV program development. It is expected to be used later for engineering development tasks on aircraft programs.

The Varian 620i also is used in Electro Dynamic division's new CATE-1109 comprehensive automatic test equipment stations.

"TRADE" UNIT—John Slattery of Convair Aerospace-SD tries out Varian 620i computer given division in exchange for program he developed. Looking on is F. D. Applegate, director of product design, who presented ES award.



TEST TALK—Reviewing plans for compatibility tests between Convair Aerospace Division's AC-23 Centaur and an antenna model of 1971 Mariner-Mars spacecraft are, from left, Bob Benzwi of Convair Aerospace-SD, Jim Magee and Tom Shaw of Jet Propulsion Laboratory, and Ed Muckley of NASA's Lewis Research Center.

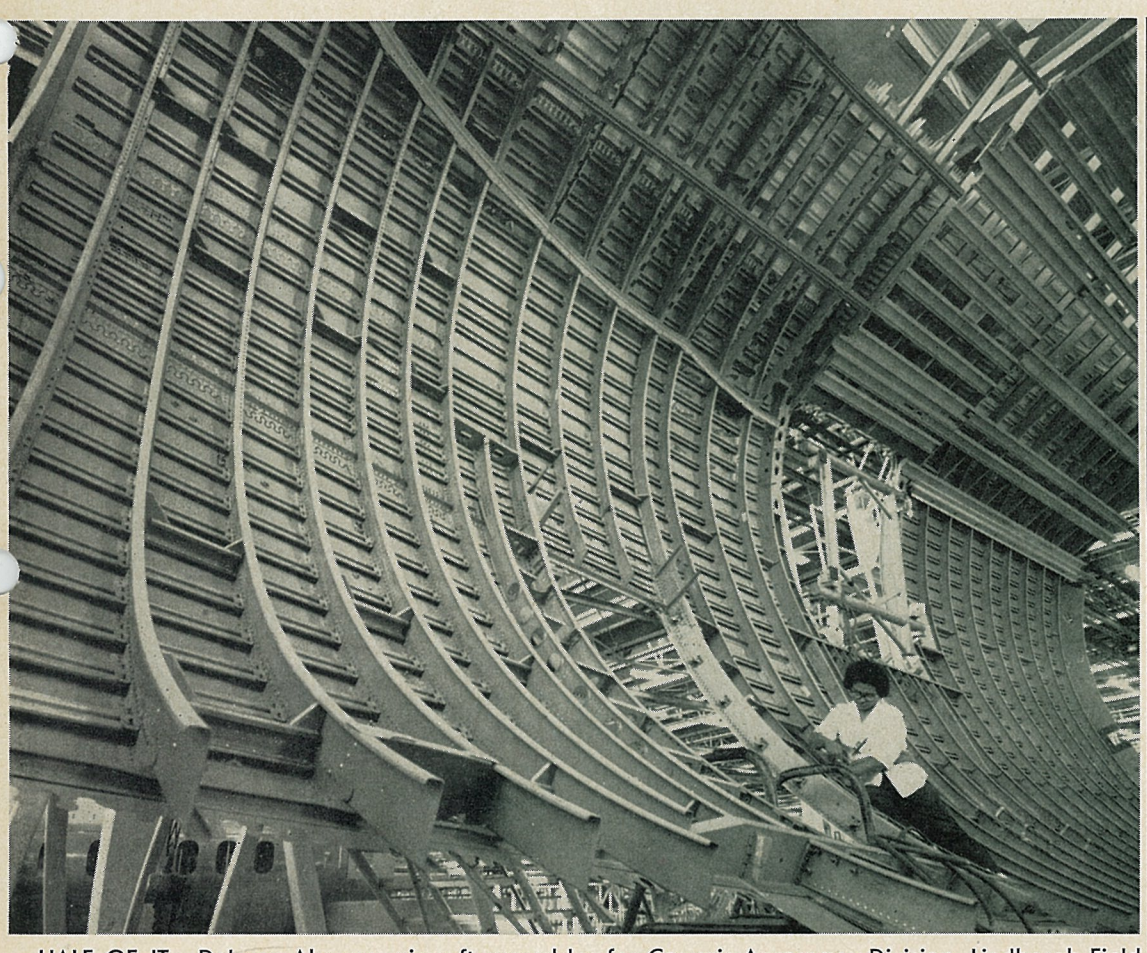


PRECISION GAGING—Magnaball surface plate was recently installed at Convair Aerospace LF plant to dimensionally check machined parts. Pictured, from left, are Louise Liggett, inspector; Roland A. Johnston, inspector; Roy H. Gilliland, manager of reliability control; Loyd C. Stuckey, chief of quality assurance; Art W. Smith, inspector (background); Al G. Blakey, Magnaball project administrator; and Jim F. DuBois, quality control engineer. A patent application on system has been applied for by Convair.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 23, No. 21 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, November 11, 1970



HALF OF IT—Delores Abrams, aircraft assembler for Convair Aerospace Division, Lindbergh Field plant, installs fasteners around cargo door of right hand half of F/G section of DC-10.

Net of $19¼ Million Noted For 9 Months

Net income of General Dynamics Corporation and subsidiaries for the nine months ended Sept. 30, 1970, was $19,233,000, equivalent to $1.82 per common share, on sales of $1,693,122,000, David S. Lewis, chairman, announced late last month.

For the first nine months of 1969 the Company sustained a net loss of $9,058,000, equivalent to 86 cents per common share, on sales of $1,784,725,000.

Net income for the third quarter of 1970 was $4,037,000, or 38 cents per common share, on sales of $532,258,000.

The chairman said that the Board of Directors was satisfied that the Company's earnings potential was sound. "However," he said, "considering the condition of our industry as a whole and in light of the current economic situation, the Board of Directors did not vote a dividend."

Dr. Mueller Outlines Aerospace Challenges

Design and production of aerospace products at minimum cost despite increasing complexity were listed as major challenges of the future for the industry by Dr. George E. Mueller at Convair Aerospace-SD's Management Association meeting Oct. 29.

Dr. Mueller, General Dynamics senior vice president, directed a task force which recently studied capabilities of a number of the Corporation's operating units and made an analysis of possible future business.

"If there's one characteristic the task force identified in the review of the future as we see it in the aerospace industry, it is that we've got to find ways of designing for low cost, producing to those low-cost designs, and supporting the product in the field at minimum cost," he said.

"A second major challenge," he said, "will be increasing complexity of systems with which we work.

"As nearly as we can tell from the space shuttle review, for example, system complexity is going to increase rather than decrease," he said. "That places a major challenge on our ability to carry out systems integration that's needed if we are to succeed in building and flying these complex vehicles."

Dr. Mueller said Department of Defense spending is expected to continue to decline the next two or three years. At the same time there is national concern about solving problems of the inner-city and in the environment.

"One of the characteristics of the environmental problems that need to be solved is that they don't require high-technology and much innovation—but do require large amounts of money," he commented.

Dr. Mueller does expect a resurgence in the demand for high-technology government - business activities, and said General Dynamics is identifying and devoting resources "to make us preeminent" in key technological

(Continued on Page 4)

MANAGEMENT MEETING—Conferring at Convair Aerospace-SD Management Association meeting Oct. 29 are, from left, Lyman Josephs, vice president and general manager of San Diego operation; Frank W. Davis, Convair Aerospace Division president; and Dr. George Mueller, General Dynamics senior vice president who was guest speaker.

Radio 'Collection Center' Designed For Coast Guard

A "shore collection center" radio station has been developed by Convair Aerospace-SD for use by the U.S. Coast Guard in collection of data from the experimental environmental reporting buoy (XERB-1) in the Atlantic.

Roy Woodle, Convair Aerospace project manager for national data buoy programs, said the station will be operated for the National Data Buoy Development Project Office by the 7th Coast Guard District in Miami.

The station was designed, assembled and tested at the Lindbergh Field plant last month and is being shipped to Miami for reassembly and checkout before being placed in full-time operation there.

Lou Scott was project leader for design and installation of the center. Bob Lewis assisted in design, assembly, and test and Don Abernathie handled software tasks.

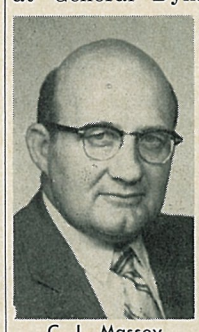
Lewis will be assigned to the Coast Guard station in Miami for six months to provide engineering support and provide training for Coast Guard personnel who will operate the center. Abernathie also will have a three-month assignment there to assist with software development and training.

(Continued on Page 2)

COLLECTION CENTER—Previewing "shore collection center" radio station developed for National Data Buoy Development Project Office, from left, are Lou Scott, project leader; Cdr. Kermit Meade of 7th Coast Guard District Headquarters; Roy Woodle, project manager for national data buoy programs; LCdr. M. E. Gilbert of National Data Buoy Development Project Office; and W. T. Dorrance, director of special programs. Station will be used by Coast Guard in Miami.

Massey Named SD Controller

Charles L. Massey, director of financial planning and analysis at General Dynamics Corporate Office since January, 1968, has been appointed controller of the San Diego operation by Frank W. Davis, president of Convair Aerospace Division.



C. L. Massey

Massey and K. B. Bitter, controller of the Fort Worth operation, both report to John D. Milling, division controller.

As director of financial planning and analysis for General Dynamics, Massey has been responsible for annual budget development, long - range planning coordination, capital-program financial administration, and division operations analysis.

He previously had served as manager of financial analysis for government divisions at Corporate Office, where his responsibilities included creation of an early-warning system for continuous review and presentation to Corporate management of division performance and problems.

Massey, a native of Fort Worth, first was affiliated with the company while he was a student at Texas Christian University and worked nights in the machine shop at what then was Convair division's Fort Worth plant.

After receiving his degree in commerce from TCU in 1949, he served at Fort Worth in various capacities for 16 years before being transferred to Corporate Office.

Massey established report writ-

(Continued on Page 4)

Next GD/NEWS Issue Will Be Out Dec. 2

GD/NEWS will slip its publishing schedule one week this month because of the Thanksgiving holidays.

The next issue will be on the stands Dec. 2.

Interplant Coordinators Named To Study Convair Aerospace

Eight interoperation coordinators have been appointed by Frank W. Davis, Convair Aerospace Division president, to assist in establishing or increasing interrelationships between like functions at the division's San Diego and Fort Worth operations.

The coordinators, by functional area, are Fred J. Bettinger, communications; Robert H. Widmer, research and engineering; L. I. "Russ" Medlock, quality assurance; Robert W. McGuffee, operations; Chester W. Cecil, logistic support; Fred E. Chambers, industrial relations; Harvey E. Moose, material; and H. Cushman Dow, legal.

Henry C. Jones, division vice president - contracts and pricing, and John D. Milling, division controller, also will be responsible for such activities in their assigned organizations.

"The specific responsibility assigned to the coordinator is to

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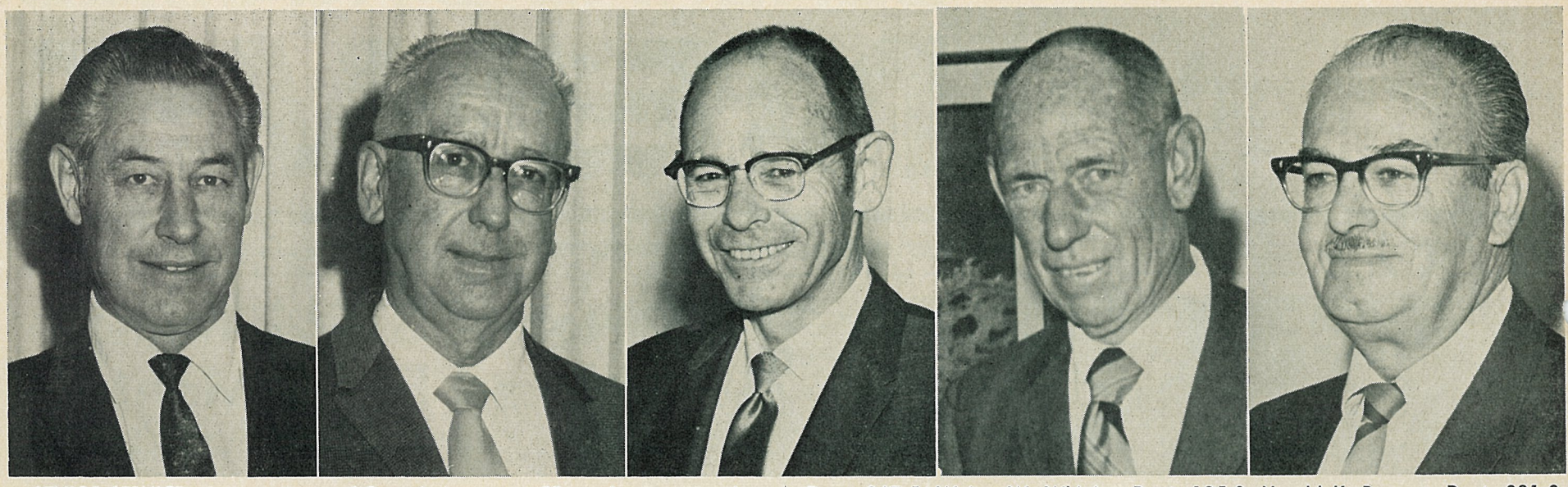

SENIOR SERVICE—Largest group of Convair Aerospace-SD employes to complete 35 years of service with the company during the same month received their service pins in October. From left are Milton C. Nesbit, Dept. 143-4; Arthur C. Thurber, Dept. 967-5; Walter W. Whittier, Dept. 195-0; Harold K. Parsons, Dept. 031-0; and Edward Robinson, Dept. 046-0. They were among first to join company in San Diego after move from Buffalo.

Log Book Entries

Service Emblems

CONVAIR AEROSPACE

Service emblems due between Nov. 1 and Nov. 15.

Thirty-five-year: Dept. 015, Mathew J. Willows; 512, John C. Hoover.

Thirty-year: Dept. 019, D. R. Wilson; 031, H. J. Beshansky, F. N. Greif, H. Hise, A. T. Landry; 202, R. E. Bechtol; 250, R. L. Lewis; 401, F. W. Walrod; 420, R. R. Sodomka; 840, C. T. Neff; 999, Marion M. Hill.

Twenty-five-year: Dept. 046, F. W. Fitch; 149, E. J. Bourgeois, A. J. Gagliardo, G. E. Ream; 401, L. W. Scott; 761, H. E. Brust.

Twenty-year: Dept. 019, F. O. Vogt; 027, J. O. Berry, L. M. Williams; 045, R. J. Norman; 046, J. W. Brett; 102, Mary Ann Downey; 130, E. E. Riley; 191, R. W. Young; 193, H. J. Woods; 202, Rosalie B. Gardner; 221, G. L. Selesko; 401, G. F. Eggerts Jr.; 403, C. Wardinski; 407, F. W. McGovern; 511, C. S. Dickerson Jr.; 518, Ruth H. Ortega; 545, W. S. Cronan; 700, Mary L. Ludwig; 731, L. O. Stackhouse; 780, V. R. Bibb; 840, R. W. Zastoupil; 964, D. S. Beight; 967, K. R. Miller; 979, J. E. Herrell, J. L. Johnson.

Fifteen-year: Dept. 019, Faye J. B. Martin; 027, Hazel N. Foster, R. P. Goodin; 046, A. D. Cruger; 149, J. S. Schwab; 191, D. L. Hawn; 195, A. N. Bowden; 201, L. R. Blackburn; 204, B. J. Moreno; 224, Betty M. Ingbretsen; 228, G. B. Reeves; 420, T. E. Johnson, R. T. Rowe, J. B. Sardina; 579, A. W. Clark; 733, A. P. Johnson; 754, R. C. Christopher; 761, A. M. Moore, J. E. Rogers; 780, E. C. McAloney; 860, J. J. Letzring; 951, T. D. Shipley; 953, L. R. Nowlin; 962, R. Lygar; 967, A. W. Torrible; 985, G. L. Bickel.

Ten-year: Dept. 001, L. F. Silva; 046, E. R. Martinez, C. A. Norman, D. E. Rose; 101, A. S. Paris; 146, G. M. Eckenboy; 149, E. L. Steinhoff; 170, Nancy J. Kuhn; 401, R. D. Culver; 407, H. B. McKenzie; 523, J. M. Mohrlock; 584, P. R. Pearson; 780, Margaret F. Pierson; 840, J. E. Maxwell; 956, Janet L. Simonson; 979, L. J. Evetts; 985, Mildred S. Miller, F. J. Tapken.

ELECTRO DYNAMIC

Twenty-year: Dept. 424, W. S. Wilson; 716, C. J. Carter.

Fifteen-year: Dept. 616, B. S. Wallach.

Awards

CONVAIR

Employe Suggestion awards approved for week ending Oct. 23:

E. S. Budzinski, Dept. 031-0, $15; J. A. Chertkow, 001-0, $188.40; M. E. Chiara, 149-3, $46.80; L. Donahoo, 027-0, $15; R. E. Herold, 144-1, $15; C. W. Johnson, 002-0, $15; L. E. Johnson, 142-1, $58.10; D. E. Koster, 759-0, $15; E. C. Krueger III, 228-4, $15; D. A. Lievanos, 780-4, $25; P. J. Lord, 015-0, $85.70; F. Malcangio, 019-0, $27.50; J. F. McClure, $27-0, $15; I. P. Mouet, 046-0, $125.05; E. W. Olson, 131-1, $15; D. G. Tessereau, 420-6, $120; A. T. Watson, 149-7, $125.05; W. B. Williamson, 027-0, $85.70; S. Williams, 220-1, $115.80.

Employe Suggestion awards approved for week ending Oct. 30:

G. W. Allen, Dept. 401-0, $15; W. F. Barto, 149-1, $15; J. R. Clinger, 517-0, $72.50; L. Donahoo, 027-0, $40 (two awards); R. P. Dunn, 985-1, $15; R. L. Fraser, 754-0, $50; V. W. Freshour, 015-0, $30 (two awards); G. H. Gleaton, 780-4, $20.40; L. M. Guess, 059-2, $65.90; I. D. Hofer, 059-5, $68.70; W. J. Hook, 02-0, $15; L. A. Horde, 420-6, $15; C. W. Johnson, 002-0, $40.60 (two awards); I. D. Kuhn, 979-1, $48.20; J. R. Leadaman, 401-4, $15; J. J. Letzring, 565-3, $100.50; R. F. Luth, 149-8, $22.50 (two awards); E. V. Marikle Jr., 507-0, $15; W. A. McGrew, 407-0, $70.60 (two awards); E. McLeod, 148-2, $15.

Also O. H. Miller Jr., 001-0, $15; A. V. Minor, 016-0, $15; R. Montijo, 754-0, $59.20; M. B. Murrah, 780-4, $20.40; G. J. Needles, 059-5, $15; D. R. Noon, 027-0, $15; D. O. Olson, 979-1, $15; K. W. Overfield, 518-1, $41; C. L. Parker, 149-8, $40 (two awards); R. D. Prock, 454-0, $15; R. R. Reekers, 143-1, $15; A. Sansone, 541-0, $15; R. P. Schulz, 130-8, $38.40; C. A. Siegel, 225-0, $15; C. Sizemore, 460-0, $20.50; W. C. Uhl, 001-0, $15; M. M. Warren, 140-2, $15; A. O. Weinberg, 979-1, $15; J. E. Williams, 407-0, $15; G. F. Wilson, 149-8, $81.30 (two awards).

"Cost Reducers"

CONVAIR

15-award pin—A. R. Anderson, Dept. 027-0.

10-award pin—J. Gallant, Dept. 144-1.

5-award pins — L. E. Campbell Jr., Dept. 144-1; M. E. Gallagher, 149-0; J. R. Ourand, 223-1; S. Teggart, 140-2; R. Kolek, 144-1; E. K. Ames, 142-1; R. Gamboa, 002-0; J. W. Hanna, 533-1; M. D. Myers, 802-0.

Personals

CONVAIR

I wish to express my gratitude to the many friends at Convair for the kind expressions of sympathy during the loss of my husband William G. Matlock, Dept. 057-0.

Mrs. W. G. Matlock

* * *

My husband and I wish to express our sincere thanks to all our Convair friends for the many kindnesses shown us after the recent death of our son, Bob. The many cards, masses, flowers, and your most generous donation to the Crest Volunteer Fire Department as a memorial to Bob are deeply appreciated.

Alice Donovan
Dept. 101-4

General Dynamics News

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Convair Aerospace editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P. O. Box 1950, San Diego 92112.

Club to Hear W. E. Bratton

William E. Bratton, vice president and general manager of the San Diego operation of Electro Dynamic Division, will be guest speaker at a Management Club meeting Nov. 18 in the Le Baron Hotel.

W. E. Bratton

He will discuss the operation's organization and prospects for 1971.

Social hour will be at 5:30 p.m. with roast sirloin of beef dinner at 6:30. Tickets are $4.75.

Bratton was appointed to his new executive post Sept. 22 and reports to Jack L. Bowers, president of Electro Dynamic Division. He previously had served as an assistant to Bowers.

Before joining General Dynamics, Bratton was vice president and general manager of the Ampex Computer Division of Ampex Corp. and had served 16 years with the Librascope Division of General Precision, Inc., including three years as its president.

"Spotlight speakers" for the meeting will be R. E. Thoman and J. H. Redman who will discuss "data display systems."

Radio Station To Serve CG

(Continued from Page 1)

Four Coast Guard representatives were at Lindbergh Field late last month for a demonstration. They were Cdr. Kermit Meade of 7th Coast Guard District Headquarters, LCdr. M. E. Gilbert of the National Data Buoy Development Project Office, CWO Robert Newman of NDBDPO, and CPO L. E. Bordelon of the Coast Guard radio station in Miami.

XERB-1 was redeployed Sept. 1 about 125 miles east of Portsmouth, Va., after a 20-day period in which it had been refurbished and its radio communications system changed to recently allocated oceanographic frequencies.

Woodle said the Coast Guard will operate the shore collection center 24 hours a day for interrogation, readout, control, and dissemination of data from the XERB-1 and other data buoys that may be deployed later in the Gulf of Mexico.

Data from the XERB-1 will be obtained by radio four times each day for use by the U.S. Weather Bureau and other agencies. Data from the buoy previously has been retrieved by radio from the ONR Convair mobile data station at Scripps Institution of Oceanography in La Jolla, Calif.

The XERB-1, a 40-foot-diameter buoy with a 45-foot mast, is ballasted to 100 tons and is held on station by a four-mile-long nylon mooring line attached to a three-ton anchor weighted by 18,000 pounds of chain.

The mooring line allows the buoy to swing in a circle about six miles in diameter. A flashing xenon light, similar to a camera strobe light, marks the buoy's position for passing ships.

Sierra Club Chief Scheduled to Speak

Phillip Berry, a San Francisco attorney and president of the 110,000-member nationwide Sierra Club, will be guest speaker at a Convair Aerospace - SD Management Association meeting Nov. 18 in the Cafe del Rey Moro, Balboa Park.

He will discuss "Conservation, pollution, and the environment." Social hour will be at 5:30 p.m. with dinner at 6:30. Tickets, on sale through association boosters, are $4 for members and their wives and $5 for non-members.

Interplant Coordinators Named To Study Convair Aerospace

(Continued from Page 1)

develop cross-talk between the functional specialists of the two plants, toward the objective of adopting common practices," Davis said in a notice to department heads.

"Additionally, they should be searching for cost reduction opportunities, including the possibility of concentrating all or specific parts of the activity in one location or the other."

Davis said each coordinator is expected to review the organizations at each operation and establish responsibilities for working together at lower levels wherever comparable responsibilities exist and potential benefits justify the effort.

The interoperation coordinators are developing plans of action and will submit quarterly progress reports to Edward E. Hatchett, vice president-management and operations.

Japanese Visitors Take Course In Ocean Data Buoy Systems

Four representatives from Matsushita Communication Industrial Co. Ltd. of Yokohama, Japan, are taking a comprehensive five-week technology exchange course in ocean data buoy systems at Convair Aerospace Division's Lindbergh Field plant.

They are Morimi Wanami, project leader; Kouzo Suzuki, assistant project leader; Toshihiro Shimizu, electronics engineer; and Koukyu Katoh, electronics engineer-software.

Two other Matsushita engineers, Enchiro Murata and Noburu Yoshimatsu, are to receive similar training later. Another, Tahashi Kawada, previously was at Lindbergh Field for a week of briefings on buoy systems.

Matsushita, one of Japan's largest industrial corporations with 45,000 employes in 31 divisions, has a recent license agreement with General Dynamics to manufacture and sell ocean data stations and large navigational buoys utilizing Convair-developed technology in the Far East.

Under the agreement, Convair Aerospace-SD personnel are providing Matsushita with technical data and know-how for design and fabrication of ocean data buoy systems.

E. R. Gauthier, marine systems group engineer, is training program manager with Paul Johnson as program coordinator.

Subjects covered in the five-week course include systems engineering, software, radio frequency-link, deployment, data acquisition, logistics, structures, sensors, mechanisms, reliability, aids to navigation, support systems, and power generation.

Instructors, in addition to Gauthier and Johnson, include Don Abernathie, Ken Morgan, Floyd Wundrow, Peter Branson, Ralph Kosic, Lou Scott, Norm Scofield, George Barlow, Russ Bjorstrom, Jim Winters, Warren Hoover, and Sherman Cohen.

The courses for each of the Japanese engineers are tailored to their primary areas of concern—with as many as three sessions being held simultaneously. An office for the visiting industrialists has been established adjacent to the marine systems offices in Bldg. 5 at Lindbergh Field.

Matsushita anticipates development of its first large buoys next year. Under the license agreement, there will be a reciprocal transfer of new buoy systems technology developed by General Dynamics and Matsushita.

The Matsushita engineers had heard much about San Diego previously because of the sister-city relationship between Yokohama and San Diego in the president's "people to people" program. One of the first points of interest they visited was the Friendship Bell on Shelter Island given to San Diego by the people of Yokohama.

Matsushita, probably best known in the U.S. for its Panasonic radio and television sets, has divisions producing electronic components, home appliances, electric motors, refrigeration units, and industrial apparatus.

Matsushita has recently supplied two weather buoys of their own design to the Japanese Meteorological Agency. These buoys are considerably smaller than the Convair buoys, and are presently undergoing evaluation.

Death Takes Former Engineering Leader

E. R. Peterson, General Dynamics employe for 29 years who previously had served as vice president-research and engineering for the former Convair and Pomona divisions, died Oct. 24 in his La Jolla, Calif., home.

Funeral services were held Oct. 28 with internment in El Camino Memorial Park. He is survived by his widow, Elizabeth, and two sons, Thomas and Lawrence.

An E. R. Peterson memorial fund has been established at the University of Minnesota in Minneapolis.

MATSUSHITA MEN—Engineers from Matsushita Communication Industrial Co. Ltd. of Yokohama now at Convair Aerospace-SD plant for training program discuss buoy systems with E. R. Gauthier, left, and Paul Johnson, right. From left, they are Morimi Wanami, Toshihiro Shimizu, Koukyu Katoh, and Kouzo Suzuki.

CRA Adventurers to Tackle Baja's Lofty Diablo Peak

CRA Adventurers will climb 10,126-foot Mt. Diablo, the highest peak in Baja California, over the four-day Thanksgiving weekend.

Bill Davenport and John Smaldino will be leaders for the outing, which also will include a car camp for those not wishing to tackle the Mt. Diablo ascent.

Those making the trip will meet at 8:30 a.m. Thursday (Nov. 26) at Highways 98 and 111 in Calexico and form a caravan for the remaining 96 miles along Mexico 5 and 37 miles over a dirt road to the Diablo Canyon roadhead.

A car camp will be established at the roadhead at 2,000-foot elevation where there will be wood but no water. The car campers can explore minor canyons and study the desert plants and wildlife in the area.

The Diablo peak climbers will hike about six miles into Diablo Canyon to an overnight campsite at 6,000-foot elevation where there will be wood and water. A 10-mile hike to cedar camp will be made the following day.

Assault of the peak on Saturday will include some third class (boulder hopping) and fourth clasc (vertical with rope) climbing that the leaders say should be a challenge for experienced hikers. The group will hike back to the car camp and return on Sunday (Nov. 29).

* * *

"Dream Seekers," a pilot film for the "Adventure" TV series, will be seen by CRA Adventurers in their meeting at 7:30 p.m., Nov. 18 in the CRA Clubhouse auditorium.

The film shows a family searching for hidden treasures, gold, semiprecious stones, old bottles, Indian arrowheads, and other reminders of bygone days near Jerome, Ariz.

George Zorrilla also will show 80 color slides from his recent vacation trip to the Yucatan peninsula. There will be a drawing for two Thanksgiving turkeys.

Pardee Transferred To Corporate Office

Donald R. Pardee, manager of management systems and chief of division systems for Convair Aerospace - SD and the former Astronautics division since 1964, has been transferred to General Dynamics Corporate Headquarters as director of computer and electronic data processing consolidation. He reports to J. T. MacDonald, vice president-manufacturing and facilities.

L. E. Shea has been appointed acting manager of management systems (Dept. 150-0) for Convair Aerospace-SD, reporting to C. L. Massey, controller.

Reporting to Shea are data processing operations Dept. 101-0, directive control Dept. 150-0, data systems Dept. 170-1, methods and procedures Dept. 170-2, and office services Dept. 170-8.

Van Horn Assists With Realignment

W. L. Van Horn has been placed on special assignment by L. C. Josephs, vice president and general manager of Convair Aerospace Division's San Diego operation, to facilitate transfer of activities being reassigned to the Electro Dynamic Division.

Van Horn will coordinate necessary physical rearrangements and will be responsible for reassignment of manufacturing and factory-support personnel involved in the transfer.

W. R. Bruce is serving as acting director of operations program management and control in addition to performing his regular duties as manager of program plans and control while Van Horn is on the special assignment.

Ralph Way Scores Second Golf Ace

Ralph Way, Dept. 400, shot his second golf ace while the witches were flying, Oct. 31 on the Torrey Pines north course playing with a General Dynamics foursome.

"It was hazy and overcast each time," he said, "so I've never seen the golfers dream, but this time I heard it hit the flag." His first ace was scored while playing in Oregon.

The hole-in-one was on the 178-yard 17th hole.

Five Complete Course In Public Speaking

Five Electro Dynamic-SD Management Club members recently completed a speechcraft class taught by members of Convair Toastmasters Club. They were John Wokuluk, Harold Sommers, Joe Roberti, Bob Williams, and Ray Fullerton.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

Q—Although hot tea is available at other locations, why don't vending machines in Bldg. 33, KM, offer this service? Also, why can't fresh fruit be made available?

A—Requests for hot tea to be installed may be made by contacting ARA, ext. 1300 KM. Fresh fruit is not offered because of the spoilage factor.

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Q—Could employe services make available the special schedules that will be necessary for 1970 income tax computation in regard to the Savings and Stock Investment Plans?

A—Tax worksheets have been distributed along with Savings and Stock Investment Plan election cards.

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Q—In the Salaried Personnel Policies Manual it is stated that salary surveys are conducted yearly and salary ranges adjusted to be competitive. Was a change made this year?

A—Yes. On 9/14/70 the salary structures were adjusted upward by three per cent on the minimum and five per cent on the maximum to the nearest $5 increment.

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Q—Recently my family tried to reach me in an emergency but I didn't get the message for more than an hour. Couldn't the calls be routed to the extension nearest the employe?

A—Emergency calls are routed to the employe's supervisor as the one best informed as to the employe's whereabouts. All employes are given an unrestricted extension number to call to report absences and normally this should be used for emergencies as well.

'Money' Course Opens Tonight

"You and Your Money," a five-session course for General Dynamics employes and their wives on estate building, will be presented beginning tonight (Nov. 11) by the Convair Aerospace-SD Management Association.

Sessions will be from 7:15 to 9:15 p.m. Wednesdays through Dec. 9 in the Blg. 2 presentation room at Kearny Mesa.

Speakers and subjects will be:

Nov. 11 — Robert Mooney of Touche, Ross and Co.; "Taxes and the 1969 tax reform act."

Nov. 18—Bruce Furr of Delger Corp.; "Insurance."

Nov. 25 — Robert Menger of Goodbody and Co.; "Stocks and bonds."

Dec. 2—Philip Martin of Southern California First National Bank; "Wills, trusts, estate taxes, and gift taxes."

Dec. 9—Charles Goff of Commonwealth Capital Corp.; "Investment trusts."

Con-Trib Allocates More Than $10,000

Grants totaling $10,025 for 13 health and community service agencies in California and Florida were approved by the Convair Employes' Con-Trib Club committee in Oct. 15 and 29 meetings.

Allocated to agencies in the San Diego area was $2,000 to the St. Vincent dePaul Society for operating expenses and $400 to the Boy Scouts of America for purchase of a duplicating machine.

Florida allocations, approved on recommendations of the employes' advisory committee there, were $1,000 to the American Cancer Society, $1,000 to the Canaveral Area Heart Association, $500 to the National Foundation - March of Dimes, $1,000 to the Muscular Dystrophy Associations of America, Inc., and $300 to the Brevard County Community Achievement Center, Inc.

Grants approved on recommendation of the Vandenberg AFB employes' advisory council were $1,500 for the United Fund of Northern Santa Barbara County, $1,000 for the Lompoc Valley United Fund, $500 for the Tuberculosis and Health Association of Santa Barbara County, $525 for the Salvation Army for its Christmas appeal and "Operation Big Brother," and $300 for the Muscular Dystrophy Association of America, Inc.

Twilight Golfers Receive Trophies

Winners and runners-up in the Electro Dynamic-SD twilight golf leagues have been awarded trophies.

Eighty players participated on 16 teams in the four leagues during the 17 week competition. Play was on Monday and Tuesday nights at Torrey Pines.

Winners receiving trophies were Tom Liles, Joe Ravenis, John DeTate, and Al Christie. Runner-up trophies went to Tom Daugherty, Bob Baker, and Paul Buckingham.

Don Costelow also received a trophy from C. B. Bagaloff, golf commissioner, for outstanding service to the leagues. Other players were awarded golf balls.

Beginners Class In Dancing Slated

A 12-week beginners course in ballroom dancing will begin Nov. 16 in the CRA Clubhouse auditorium.

Classes will be held from 7:30 to 9 p.m. Mondays with Bob McGlade as instructor. Tuition will be $18 per couple and registration will be at the first session.

Three basic American steps—fox trot, waltz, and swing—and four Latin steps—tango, rhumba, cha cha, and samba — will be taught.

Phone Royce Riggan, CRA Ballroom Dance Club commissioner, at ext. 1438 LF for additional information.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 KM. Deadline for next issue of GD/NEWS is Nov. 23. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS — Meet 7:30 p.m., Nov. 18.

BADMINTON—Play 7-10 p.m., Mondays, Federal Bldg., Balboa Park.

BALLROOM DANCING — Beginners course to start Nov. 16. Classes 7:30-9 p.m., Mondays.

BICYCLE CLUB — Rancho Santa Fe 25-mile ride, Nov. 14; Ramona 50-mile ride, Nov. 28. For information call Bob Williams, ext. 1148 LF.

BRIDGE — Duplicate bridge sessions, 7:30 p.m., each Friday.

CAMERA CLUB—Meet 7:30 p.m., Nov. 15, Photo Arts Bldg., Balboa Park.

CERAMICS—Meet 9 a.m. - noon and 7-10 p.m., Tuesdays and Thursdays.

CHESS—Play 7 p.m., Nov. 18.

CHORUS—Meet 7:30 p.m., Mondays.

COUNTRY & WESTERN MUSIC — Meet 7:30 p.m. each Thursday.

DELTA DIVERS—Meet 7:30 p.m. tonight (Nov. 11).

FENCING—Workouts and instruction 7:30 p.m., Fridays, YWCA, 10th & C Sts.

FISHING CLUB—Potluck 6:30 p.m., meeting 7:30 p.m., Nov. 17, Gillespie Field Clubhouse.

GOLF—Carlton Oaks tournament, 7 a.m. tee-off, Nov. 21-22.

GUN CLUB—Fun shoot, 9 a.m., Nov. 29.

HEALTH CLUB—Open 9:30 a.m. - 10 p.m., Monday through Thursday; 9:30 a.m. - 9 p.m. Fridays; 9 a.m. - noon, Saturdays; "women only" weekdays, 9:30-11 a.m.

ICE SKATING—GD family skate night 6:15-7:45 p.m. each Thursday, House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1 (including skates).

MINIATURE RAILROAD — Operating sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work session 7 p.m., each Tuesday, CRA Missile Park.

ORGAN CLUB—Meet 7 p.m., Nov. 24 in the home of Glen E. Peace, 4204 42nd St.

PISTOL CLUB—Shoot 9:15 a.m., Nov. 22, S.D. Police Pistol Range.

RADIO CLUB — Meeting 7:30 p.m., Nov. 19.

RIDING CLUB — Meeting 7:30 p.m., tonight (Nov. 11).

RIFLE CLUB—Senior shoot 7 p.m., Nov. 11 & 25; Junior shoot 9 a.m., Nov. 21; Gillespie Field range.

ROADRUNNERS — Nov. 26 meeting cancelled due to holidays.

ROCKHOUNDS—Meeting 7:30 p.m. tonight (Nov. 11).

SAILING — Meeting 7:30 p.m., Nov. 25.

SKI CLUB—Meeting 7:30 p.m. Dec. 1, South Bay Club.

SPORTS CAR CLUB—Meeting 7:30 p.m. tonight (Nov. 11).

SQUARE DANCE—Dance 8-10 p.m., Thursdays.

TABLE TENNIS — Tournament for novice & advanced players, 7 p.m., Nov. 13.

TENNIS—Group and private lessons starting soon. Call Bill Connor, ext. 2464 KM for information.

TOASTMASTERS—Convair Toastmasters meet 4:30 p.m., each Wednesday. Dynamic Toastmasters meet 5:30 p.m., Thursdays.

TRAILBIKE—Meeting 7:30 p.m., Nov. 12.

TRAILERS—Meet 7:30 p.m., Dec. 1.

WOMENS GOLF—River Valley tourney, Nov. 14.

Tennis Tourney Winners Named

Results of last month's tennis tournament sponsored by CRA Tennis Club and Convair Aerospace-SD Management Association have been announced by Bob Herold, CRA tennis commissioner.

Ninety players competed in the tournament. All matches were round-robins of six or eight games each.

Winners, finalists, and scores by division were:

Advanced singles—Stan Griffin, winner; Cecil Norwood, finalist; 32-39.

Advanced doubles — Stan and Jeff Griffin, winners; Cecil and Rick Norwood, finalists, 26-23.

Intermediate singles—H. Yoshihara, winner, Chuck Griffin and Manuel Fernandez, tie with finalist to be determined in playoff; 10-9.

Intermediate doubles—H. Yoshihara and Mike Griggs, winners; Manuel Fernandez and Andy Seidl, finalists, 36-32.

Novice singles — Manuel Fernandez, winner; Jon Paschke, finalist, 29-28.

Novice doubles — Jon Paschke and Keith Alexander, winners; Gary Thompson and A. Lassister, finalists; 25-24.

Mixed doubles—Diana and Mike Griggs, winners; Jo and Jeff Griffin, finalists; 27-26.

Tennis Instruction Offered by Coach

Dave Bennett, newly appointed head tennis coach at United States International University's Cal-Western campus and son of Ruth Bennett of Convair Aerospace-SD's Dept. 460-0, is scheduled to conduct group and private tennis lessons for interested General Dynamics employes and family members on CRA courts beginning late this month.

One-hour lessons for groups of four will be scheduled weekly for six weeks at $15. Sign-up will be at 10 a.m. Nov. 21 at the CRA courts. Private instruction will be $3.50 per half-hour. Call Bill Connor, ext. 2464 KM, for additional information.

Bennett is a recent graduate of the University of Maryland, where he was top-ranked tennis player and received athletic scholarships for his proficiency on the courts. He also has won numerous trophies in CRA tournaments in previous years.

Festival Aided By 'Shutterbugs'

Members of the CRA Camera Club had key roles in staging the Mission Bay Photo Festival which was attended by more than 15,000 photographers from the box-camera type to the semi-professional Oct. 31 and Nov. 1.

Bruce Williams of Dept. 170-1 was general chairman for the event, sponsored by Mission Bay Associates and the Southern California Association of Camera Clubs with which the CRA group is affiliated.

Clark Winsor of Dept. 101-2 was model escort chairman. Others assisting included Jim Mildice of Dept. 989-2 (commissioner); Tony Paris, 101-2; Al Oehler, 049-0; Ed Engledow, 101-2; Owen Ward, 170-1; Jerry Madsen, 780-4; Erich Wolf, 578-0; and Ed Thompson, IBM representative for 101-2.

Models posed for the photographers and competed for "Miss San Diego Photo Festival" and "Miss Mission Bay Photo Festival" titles. Other activities included a photographic trade show, a pumpkin carving contest for children, presentations by several dance groups, and clown skits.

Christmas Tourney Planned for Golfers

A combined plant championship and Christmas golf tournament has been scheduled Dec. 24 at Cottonwood Country Club by the Convair Aerospace - SD Management Association and Convair Recreation Association.

Employes, family members, and guests may participate but only those who have played in three of the last six CRA monthly tournaments are eligible for the plant championship.

More than 300 golfers competed in the championship tournament last year and Terry Kell and Bob Kaminsky, chairmen, expect a larger turnout for this year's event.

A shotgun start is scheduled at 7:30 a.m. on the Ivanhoe course and tee-offs will begin at 7 a.m. on the Monte Vista course. Green fees will be $5 and carts will be $8 and must be reserved. Prizes will be awarded in several categories.

Sea World Weekend Group Totals 1,095

A total of 1,095 tickets were sold for the General Dynamics "weekend" at Sea World Oct. 24 and 25.

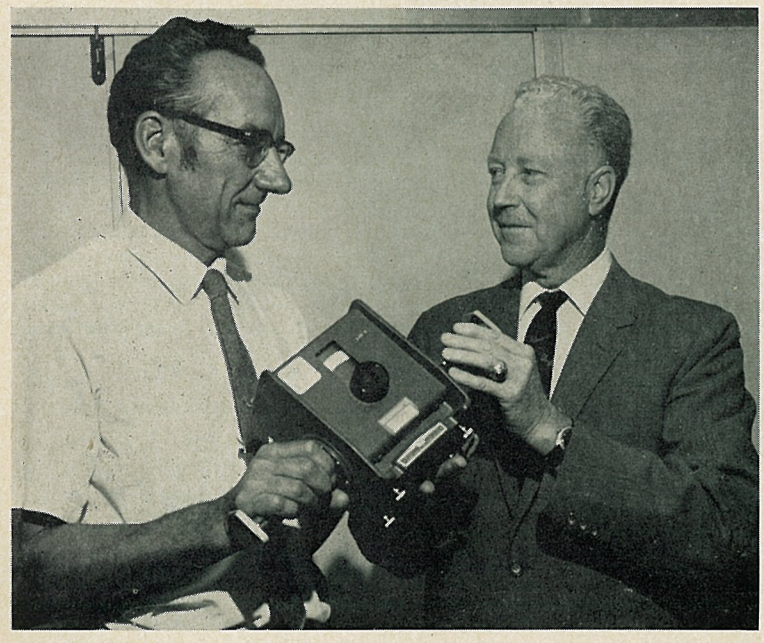
Ron Bippert, manager of family events for the Convair Aerospace-SD Management Association, said attendance included 830 from Convair Aerospace-SD, 171 from Electro Dynamic - Pomona, 46 from Electro Dynamic-SD, and 48 from Stromberg DatagraphiX.

A special evening for General Dynamics families at Disneyland has been scheduled on March 27, 1971.

SUSTAINED CRAFTSMANSHIP — Twenty-seven Convair Aerospace-SD functions were awarded plaques at supervisors' meetings Oct. 2 for sustained craftsmanship during a period of six months. Photo at left shows awards presented at Lindbergh Field and that at right those at Kearny Mesa. Frank Davis, Convair Aerospace Division president, is at right in each photo and Lyman Josephs, vice president and general manager of San Diego operation, is at left.

ENGINEERING HONORS—Electrical/environmental test labs Dept. 578-5 received the Convair Aerospace-SD research and engineering department Craftsmanship Achievement banner for third quarter outstanding performance in reducing errors in test procedures, test reports, task histories, and environmental runs and for submittal of employe suggestions and realizing profit on outside subcontracts. George W. Conrey, group engineer, accepted award for group from F. D. Applegate, director of product design.

HIGH-DOLLAR SAVERS—W. L. Carr, left, Dept. 202-0 industrial engineer, and F. E. Grossher, right, Dept. 015-0 group foreman, receive commendation certificate from Frank Blair, Convair Aerospace-SD manager of fabrication, for cost reduction project on DC-10 program that will save an estimated $928,000. Carr and Grossher developed a method to reduce machine time and related labor costs involved in highly-intricate DC-10 door-beam machining task.



CALIBRATION INNOVATOR—Everett K. Ames, left, a senior standards and calibration labs engineer in Dept. 142-1, discusses techniques and procedures he has developed to eliminate need for new microwave test equipment and reduce dependence on National Bureau of Standards with A. W. Reed, Convair Aerospace-SD manager of reliability control and support services. Ames received five commendation certificates for cost reduction projects saving the division an estimated $10,400.

Sustained Craftsmanship Brings Award Plaques

Craftsmanship Sustained Performance award plaques were presented to 27 Convair Aerospace-SD departments during supervisors' meetings Oct. 29 at Lindbergh Field and Kearny Mesa plants.

W. E. Magnuson, Craftsmanship program chairman, said each of the departments had successfully met or exceeded meaningful goals and objectives during a six-month period.

Similar plaques also were earned by division departments at Vandenberg AFB and the Eastern Test Range.

Departments receiving plaques in the Lindbergh Field presentation and individuals accepting for them were:

Dept. 002, processing and welding, R. A. Davis; 015, machine shop, S. T. Krebs; 016, electric bench, R. J. Ratliff; 019, metalbond and plastic trim, L. W. Stamper; 027, F-111 assembly, J. F. Ames; 031, experimental, Willard Martin; 045, C-5 empennage assembly, B. T. McMicken; 049, non-current spares, A. C. Oehler; 400, planning audit, J. S. Williams; 401, tooling, J. C. Duffy; 518, graphic reproduction, L. S. Elmstrom; 759, tank assembly and welding, Norman Cardwell; 833-2, shipping, staging, and traffic, J. J. Janssen; and 840, procurement document review, L. A. Wood.

Receiving plaques at Kearny Mesa were:

Dept. 420, planning audit, G. E. Nuss; 754, production plastics, W. R. Walker; 731, machine shop, Robert Franklin; 732, sheet metal, 733, processing and tubing, J. M. Kline; 761, Atlas-Centaur assembly and checkout, Dean Myers; 780-1, production electronics, Gunner Gatterman; 780-2, research and development electronics, 780-3, test equipment manufacturing, 780-5, harness manufacturing, R. J. Bloomer; 780-4, AGERD acceptance and checkout, 780-6, aerospace ground equipment, Tom Hutchinson; and 840, procurement document review, L. A. Wood.

Coffee Up 5c After 16 Years

Cost of coffee and soft drinks from vending machines and cafeterias at Convair Aerospace-SD plants was increased to 15 cents per cup effective Nov. 2.

Roger W. Brown, acting director of industrial relations, said the company had been resisting a price increase for more than a year.

"Coffee has been 10 cents a cup since 1953 and inflation finally forced us to adjust the price," he said.

"For the past few months the vending firm has been sustaining a net loss on each cup of coffee sold.

"During the first five years wholesale bulk coffee costs have gone up 29.7 (canned) and 38.5 per cent (bagged); sugar, 21 per cent; cream, 12.5 per cent; and cups, 14.5 per cent.

"The new vending machines cost three times as much as the older models and the cost of a service truck has increased 38 per cent in the last five years.

"Wages and fringe benefits for cafeteria and vending firm employes also have increased significantly," Brown said.

"We concluded from these economic facts that a price increase was necessary. Our study also showed that beverages have been 15 cents for several months from vending machines and cafeterias at major aerospace firms in the Los Angeles area and in facilities of many other local business, industrial, and service firms.

"Reducing the commission paid by the vendor firms to Convair Recreation Association was considered but this would have severely curtailed or required closing of CRA facilities and would, at best, have been a temporary expedient," Brown said.

"Considering the benefits of CRA to thousands of our employes, this alternative was rejected."

Cost of cartons of milk, orange juice, lemonade, and grape drink from vending machines and the cafeterias was not changed.

Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, Nov. 14. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. Also not permitted are canvas or open-toed shoes and bare feet.

Massey Named SD Controller

(Continued from Page 1)

ing and motion picture groups at Fort Worth while assigned as a writer-editor from 1951-56, handled administration and weapons development planning of several advanced engineering proposals as a senior engineering administrative assistant from 1956-61, and developed improved methodologies for program management and control as schedules engineer in 1961-62.

He was assistant manager on the F-111 proposal while serving as a management systems specialist in 1962-63 and later assisted with engineering department administration and management systems group development as a technical administrative supervisor from 1963-66.

He was chief of management support and new business coordination in the research and engineering department from March 1966 to July 1967.

Massey served in the Army Air Corps during World War II. He has had post-graduate courses in government, sciences, and mathematics at TCU and has taken numerous industrial training courses offered through the Management Association in Fort Worth.

Thank You!

Water Bomber Drops Praised

(Following is a letter addressed to Roger Lewis, president of General Dynamics, from Philip G. Patch, president of Weston Hydraulics in Van Nuys, Calif., a division of Borg-Warner.)

"I noticed in the **General Dynamics NEWS** that you had personally directed the diversion of the Canadair CL-215 water bomber into action against recent Southern California fires. I wish to thank you, and Doug Adkins and Yves Mahout, pilot and co-pilot, for probably saving my house from burning. For three days and two nights we watched the fire advancing toward the Topanga Canyon ridge. The water bomber made continuous circuits, and I believe was majorly responsible for stopping the fire at the ridge. Had it gone over, our house, and many others in Pacific Palisades would have been directly in the path of the conflagration.

"The plane and pilots did a most commendable job. I am sure Southern California needs a fleet of CL-215 water bombers.

"Thank you again for taking timely and decisive action in a crucial situation."

Dr. Mueller Notes Future

(Continued from Page 1)

areas of the future.

He pointed out, for example, that Convair Aerospace personnel in San Diego and Fort Worth have leading positions in development of high-strength and lightweight composites and said methods for producing, testing, and using such materials are being pursued.

"One of the things we're trying to do during this period of declining government work is to build as strong a team as we possibly can," he said. "There may be fewer aerospace companies five years from now and we want to be sure we are one of those that is in business at that time and that we are in a posture to capture all the business we can handle.

"With the solid backlog we have in our various divisions and the management talent we have acquired, we should have the opportunity to move into an unchallenged position of leadership in the aerospace industry in the next year or two."

He said reorganization of the Convair and Fort Worth divisions into Convair Aerospace Division is "one means of preparing for the business we will be engaged in for the next several years."

Dr. Mueller noted that the division is actively pursuing the A-X aircraft, space shuttle, and other programs and said the division has been complimented by McDonnell Douglas for its work on the DC-10 fuselage.

He said he believes there is a "reasonable chance" to augment production of the F-111 through the 1970s because it is the best aircraft for its mission in the world today and there is no other plane with its characteristics and capabilities.

Safety Crib Hours To Change Nov. 30

Safety cribs at Convair Aerospace-SD plants will have revised hours of operation effective Nov. 30, Del Dimmitt, chief of safety and fire, has announced.

New scheduled hours will be:

Lindbergh Field — 8:15 to 11:30 a.m. and 12:30 to 5 p.m. Mondays; 12:30 to 5 p.m. Wednesdays; and 8:15 to 11:30 a.m. and 12:30 to 5 p.m. Fridays.

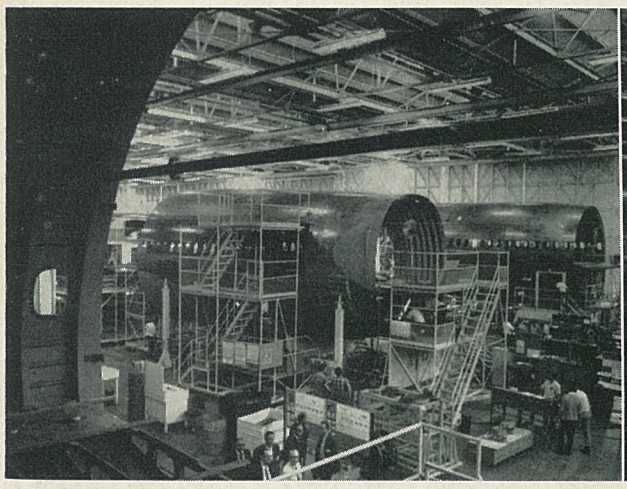
Kearny Mesa—8:15 to 11:30 a.m. and 12:30 to 5 p.m. Tuesdays and Thursdays.

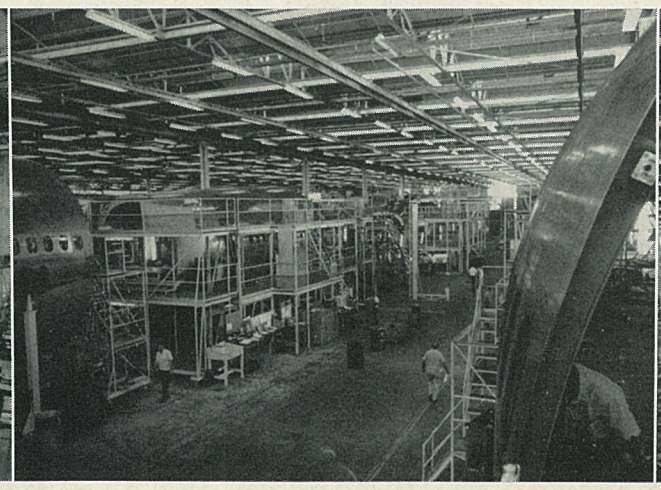
AF Plant 19—8:15 to 11:15 a.m. Wednesdays.

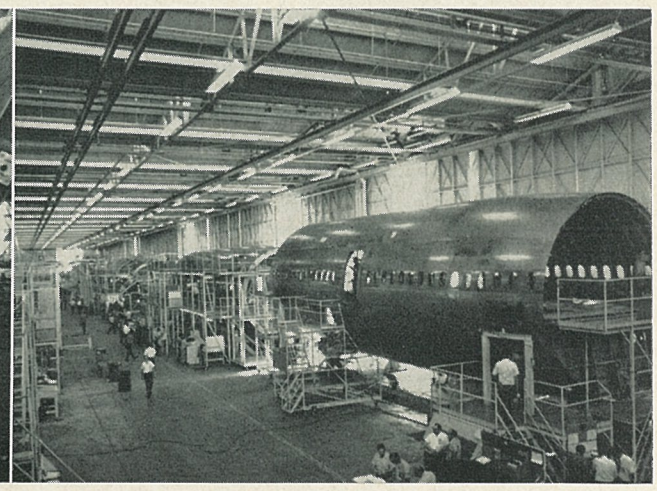
SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 23, No. 22 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, December 2, 1970







FUSELAGE LINE—Increased pace of assembly of sections for DC-10 tri-jetliner fuselages can be seen in photos in Bldg. 3 at Convair Aerospace-SD's Lindbergh Field plant. Jack Hurt, DC-10 program manager, said the assembly schedule has been accelerated in preparation for modifying fixtures for start of assembly of DC-10-20 series aircraft sections late this month. The C/D section for the 11th DC-10-10 is being delivered this week and subassembly had been started on the C/D section for the 19th aircraft. The second DC-10 to take to the air (No. 3 aircraft) made its maiden flight of 3¼ hours Oct. 24. It landed in Yuma, Ariz., for test of anti-skid system and thrust reversers before returning to Long Beach. It has since made several additional test flights.

Total of $411,000 Pledged For 1971 United Crusade

Convair Employes Con-Trib-Club and Electronics-SD Employes Con-Trib-Club pledged a total of $361,000 to San Diego County's United Crusade for 1971 at a report luncheon Nov. 18 at Vacation Village Hotel. A General Dynamics Corporate pledge of $50,000 also was made.

The Con-Trib pledges will be paid in 12 monthly installments during the next year to United Community Services of San Diego County to help support 69 health, youth, and community service organizations in the county.

Convair Con-Trib's pledge of $325,000 was announced when Sandy Anderson of Dept. 170-1 and two veteran Con-Trib-Club committee members, Henry Fuller and Ernie Larsen, displayed a large pledge sign at the luncheon.

In addition to the Con-Trib-Club name and amount of the pledge, the sign carried the comment "Because We Care" — an answer to the Crusade's "Who Cares?" slogan.

Electronics-SD's Con-Trib pledge of $36,000 was announced by George Leesch, manager of industrial relations. It represents a $42 contribution from each employe and a 100 per cent increase in the UCS pledge in two years—up from $18,000 for 1969 and $27,000 for this year.

Leesch was introduced by Don Prim, vice president-research and engineering, who is serving as chairman of the electronics section of the United Crusade's major firms division.

Convair Con-Trib UCS pledge for next year was approved by the Con-Trib committee at its Nov. 12 meeting.

The committee also granted $1,000 to St. Stephen's Group Home for operating expenses, $1,000 to the Salvation Army toward its cost in aiding east county fire victims, $1,000 to the Volunteers of America for program services, and $500 to Neighborhood House for holiday dinners at the Logan Heights Neighborhood Service Center.

A grant of $2,000 also was approved for the Elementary Institute of Science contingent on verification of its having federal income tax-exempt status.

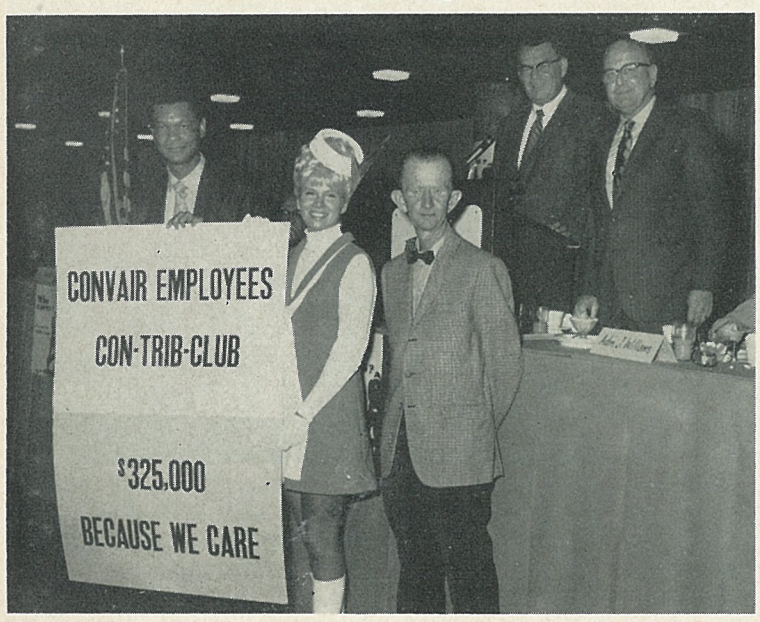
Also recently disbursed was a $600 grant to the Crisis House of El Cajon which had been approved Oct. 29 pending verification of its federal income tax-exempt status.

Beneficiary Update Asked for Records

Employe benefits representatives have asked employes to update their beneficiary and dependent information if needed.

"Many employes designated their beneficiaries and dependents several years ago and have not changed them as their circumstances have changed," Ron Bippert of employe benefits said.

"An accurate listing of beneficiaries and dependents is important for the employe's medical and life insurance, savings and stock investment plan, and retirement files."



"CARE" COMMITMENT—Convair Employes Con-Trib-Club 1970 pledge for United Crusade is announced at Crusade report luncheon by division employes Henry Fuller, Sandy Anderson, and Ernie Larsen. On platform at right are Don Prim, chairman of electronics section of Crusade, and Leonard Zanville, Crusade chairman.

High School Study Scheduled In-Plant

In-plant courses leading to a high school diploma will be offered for the first time beginning in January by Convair Aerospace-SD's educational services section in conjunction with Midway Adult High School.

Wayne Turner, coordinator, said a schedule of courses will be established after the number of employes who will be enrolled has been determined. Classes will be scheduled from 4 to 7 p.m. in Bldg. 14 at Lindbergh Field.

Interested employes have been asked to call educational services, LF ext. 2564. Counseling and equivalency tests will be available.

Vandenberg Employes Honored For Seven-Year Safety Record

Convair Aerospace Division employes at Vandenberg AFB, Calif., have been awarded a trophy for completing seven years and 6,210,623 manhours of work without a disabling injury.

Lyman C. Josephs, vice president and general manager of the San Diego operation, presented the trophy in special ceremonies Nov. 19 at Vandenberg. Accepting for the division's 167 launch vehicle programs personnel at Vandenberg were Jim Copeland, chief of launch operations and acting base operations manager in the absence of Robert Lynch, and Glen Berg, safety engineer.

Del Dimmitt, Convair Aerospace-SD chief of safety and fire who also was present for the ceremony, termed the seven-year record a "great achievement" that is especially significant for a group such as that at Vandenberg that is constantly working with high pressures, exotic fuels, and hazardous types of testing.

"The type of work that goes on in a facility such as this is extremely more hazardous than the type of work normally found in an industrial complex," Dimmitt said.

"Work such as you are involved in is normally where we would expect a high frequency rate of accidents. I think it (the seven-year record) shows sincere dedication to safety on the part of everyone connected with this organization.

"I would like to personally congratulate and thank each one of you for a job well done. You have exhibited true craftsmanship in the area of accident prevention."

Josephs and Dimmitt also expressed appreciation to Berg and Ray Forrest, chief of industrial relations, for their efforts in helping to maintain the excellent safety record. The last accident involving lost time at Vandenberg occurred Sept. 30, 1963, when an employe suffered a hip fracture that required nine days away from his job.

Berg said Convair Aerospace people at Vandenberg also have the lowest traffic citation rate on the base and have earned many commendations from the Air Force for outstanding achievements in accident prevention.

"This award winning safety record is not something that just happened," he said. "It is the result of careful planning and hard work by all. It is an exhibition of management professionalism and an accomplishment of the individual worker who adopts a 'be safe' attitude for himself and toward his fellow workers."

F-106s and F-102s Score High in 'William Tell'

A four-plane team with Convair-built F-106 Delta Dart interceptors from the 71st Fighter Interceptor Squadron at Malmstrom AFB, Mont., scored a record 12,183 points out of a possible 14,800 in the Air Defense Command's William Tell-1970 interceptor weapons meet last month on the Tyndall AFB, Fla., over-ocean firing range.

Winner of team honors in competition among Convair-built F-102 Delta Dagger interceptors was a four-plane Minnesota Air National Guard team from the 179th Fighter Group at Duluth, which amassed an overall 11,832 points. This also was an all-time record for F-102 aircraft.

Runners-up were teams from the 84th Fighter Interceptor Squadron at Hamilton AFB, Calif., in F-106s and the Oregon Air National Guard's 123rd Fighter Group from Portland in F-102s.

B. F. Ferguson, F-102/F-106 deputy program manager for Convair Aerospace Division, presented delta-wing trophies to squadron commanders who also served as team leaders for the winning and runner-up teams in the two competition categories for Convair-built aircraft.

Receiving the awards were Lt. Col. A. J. Lenski for the 71st FIS, Lt. Col. Randy R. Renken for the 84th FIS, Lt. Col. A. J. Amatuzio for the 179th FG, and Col. P. E. O'Grady for the 123rd FG.

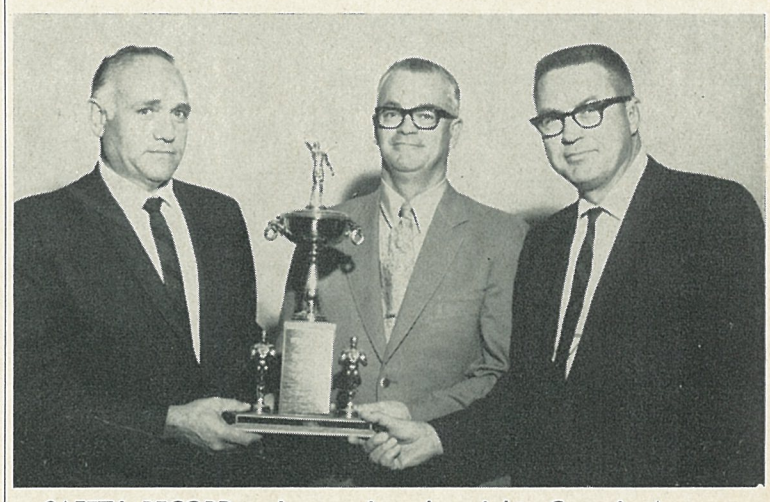
Also participating in the F-106 competition were Delta Darts from the 318th FIS at McChord AFB, Wash., and in the F-102 category were Delta Daggers from the 148th FG at Duluth, Minn.

Ferguson also presented engraved pocket knives to each of the participating F-106 and F-102 aircrew members.

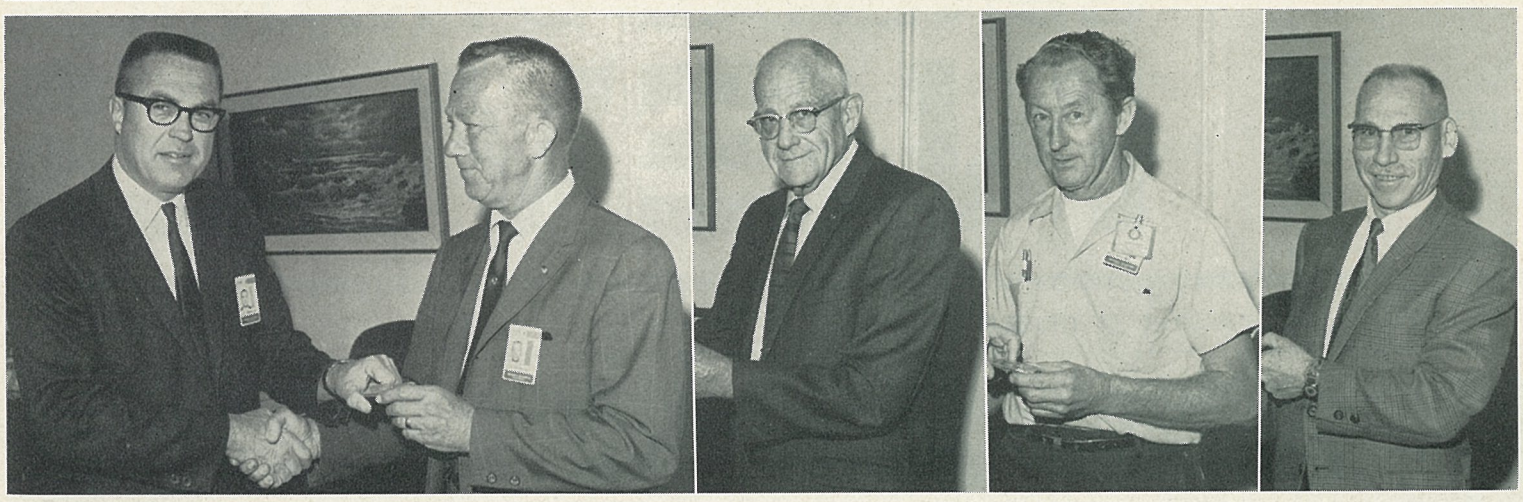
The 1970 William Tell meet, the first held in five years, provided a demonstration of the skill of nine teams with "century series" interceptors in knocking down Firebee target drones over the Tyndall range, which extends several hundred miles over the Gulf of Mexico.

Points were awarded for weap-

(Continued on Page 2)



SAFETY RECORD — Lyman Josephs, right, Convair Aerospace Division vice president and general manager of the San Diego operation, presents trophy for seven years without a disabling accident for employes at Vandenberg AFB to Jim Copeland, left, chief of launch operations, and Glen Berg, safety engineer. Personnel at Vandenberg worked more than six million hours during the seven years without an injury requiring time away from the job.



140 YEARS SERVICE—Four employes who joined company in early days at San Diego received 35-year service emblems last month. Pictured from left, Lyman C. Josephs, Convair Aerospace-SD general manager, congratulates Theodore A. Anderson, Dept. 228-6; John C. Hoover, 512-0; Mathew J. Willows, 015-0; and Gilbert L. Peyton, 520-1.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Nov. 16 and Nov. 30.

THIRTY-FIVE-YEAR: Dept. 228, T. A. Anderson; 520, G. L. Peyton; 761, J. W. Wiley.

THIRTY-YEAR: Dept. 001, H. D. Musick; 031, R. H. Egbert, F. C. Romero; 057, E. F. Kotnik; 140, J. D. Tate; 143, R. S. Sellers; 149, G. S. Durland Jr.; 228, C. E. Hitson; 400, F. Eramo.

TWENTY-FIVE-YEAR: Dept. 019, G. E. Rhea; 205, Louis M. Whitney, W. E. Burnett; 761, J. K. Bennett, W. M. Eddings.

TWENTY-YEAR: Dept. 130, D. D. Dimmitt Jr., C. E. Miller, C. P. Paularena; 193, T. S. Riley; 195, J. D. Gonzales; 223, L. L. Yarbrough; 250, A. Davis Jr., E. W. Reid; 401, C. M. Bley; 587, D. L. Greer; 597, A. N. Hatch; 754, W. R. Walker; 761, F. M. Contreras; 810, J. F. Strazz; 962, R. C. Dow; 985, W. L. Johnson.

FIFTEEN-YEAR: Dept. 001, B. Macias; 015, M. J. Peka; 027, J. F. Patterson; 046, H. M. Goodwalt, M. G. Henos; 142, A. Martinez; 142, C. R. Powell, E. R. Wheiland; 146, N. M. Kochen Jr.; 148, Christine L. Witkowski; 191, Selina C. Ward; 221, B. R. Miale; 250, H. C. Armstrong, C. Novelle, K. D. Taylor; 400, M. V. Arwood, A. J. Fritz; 401, D. Rios; 511, V. O. Kettler; 524, Lucy H. Clover; 545, J. B. Young; 562, G. J. Miyashiro; 572, D. T. Farrelly; 579, W. D. Bowers; 759, K. N. Jones, E. E. Landry; 761, F. D. Mankins; 780, R. H. Smith; 950, G. W. Lucas; 953, J. D. Wicks; 956, C. Mobillio; 979, T. C. Chitty, L. E. Green; 985, D. M. Jardee; 999, H. O. Scott.

TEN-YEAR: Dept. 015, D. A. Dudbridge; 019, H. G. Bybee; 101, Gloria E. Erickson; 195, D. R. Wirth; 228, F. M. Thomas; 460, Alberta J. Danish; 518, J. L. Martin, Shirley M. Withers; 524, Louise F. Bernstein; 585, D. J. Chiarappa; 596, W. Malkmus; J. L. Kressin; 985, Barbara R. Lingerfelder, P. W. Rogers, G. Shiroma.

ELECTRO DYNAMIC

TEN-YEAR: Dept. 581, R. R. Mendoza; 716, J. T. Nilles.

Awards

CONVAIR

Employe Suggestion awards approved for week ending Nov. 6:

J. B. Boyles, Dept. 228-1, $149.50; R. M. Braeutigam Jr., 027-0, $15; R. E. Chapman, 046-0, $20; N. Chaudoin, 733-0, $18.80; A. J. Choo, 001-0, $15 H. T. Claudy, 420-1, $15; G. S. Clinkscales, 002-0, $39.70 (two awards); R. M. Darling, 149-5, $15; A. F. DiJoseph, 518-0, $15; F. O. Edwards, 143-5, $35.40; R. C. Emerson, 403-3, $100.80; B. F. Frey Jr., 002-0, $15; O. H. Fritz, 059-5, $15; F. Gomez Jr., 019-0, $15; R. E. Haltmeier, 250-2, $15; G. Harrold Jr., 149-7, $145.80; R. A. Herrera, 454-0, $94.30; R. H. Kenner, 031-0, $15; J. P. Lemon, 059-4, $30; G. Lewis, 956-0, $15; W. F. Lutes Jr., 579-2, $15; L. A. Palais, 046-0, $79.50; D. R. Resch Jr., 059-4, $55.90; F. R. Roberts, 143-5, $20.50; H. E. Rogers, 543-1, $146.50; J. E. Strachan, 250-1, $15; J. G. Walda, 046-0, $20.10; L. E. Ward, 401-5, $15; J. W. Washer, 149-3, $15; J. J. Zorrilla, 553-1, $25.

Employe Suggestion awards approved for week ending Nov. 13:

T. A. Bessey, Dept. 143-1, $15; J. D. Brooks, 574-3, $15; O. W. Bruton, 143-5, $30 (two awards); C. S. Campanella, 149-6, $15; R. W. Clanton, 020-0, $15; P. Costa, 001-0, $12; C. A. DeForge, 574-2, $15; T. Duarte, 733-0, $15; E. F. Fleekey Jr., 045-0, $17; M. M. Evans, 810-0, $87.60; R. Gamboa, 002-0, $830.70; M. E. Howell, 143-5, $7.50; J. D. Jones, 015-0, $15; M. R. Jones, 143-5, $17.10; A. Kolas, 143-3, $15; C. Lasley, 015-0, $15; G. E. Lopez, 019-0, $33.90; W. G. Lux, 144-1, $15; J. F. Matthews, 130-9, $16.90; G. R. McCambridge, 001-0, $37.50 (three awards); O. H. Miller Jr., 001-0, $12; A. Sansone, 541-0, $15; D. T. Santos, 143-3, $15; G. Stacy, 759-0, $7.50; M. H. Thrasher, 001-0, $7.50; E. A. Werner, 144-1, $15; J. Williamson, 001-0, $15.

Employe Suggestion Awards approved for week ending Nov. 20:

R. R. Atkinson, Dept. 046-0, $86.80; C. Caplaneris, 046-0, $20; R. W. Clements, 001-0, $15; J. Danzl, 148-4, $186.-30; J. H. Derango, 963-1, $15; R. L. Fraser, 754-0, $22.90; H. A. Hartley, 979-3, $15; J. B. Hinojos, 015-0, $15; D. J. Insky, 250-0, $15; G. W. Krause, 507-0, $30; R. L. Lucas, 143-1, $15; E. Y. Martindale, 146-2, $366.70; J. H. McDonald, 420-1, $110.10; W. A. McGrew, 407-0, $46.10; N. Moffett Jr., 002-0, $15.80; F. Moore, 221-1, $15; I. P. Mouet, 046-0, $20.10; D. M. Parker, 860-0, $79; V. E. Poquette, 001-0, $15; H. F. Thompson, 027-0, $16.10; C. P. Welch, 045-0, $15; J. W. White, 149-8, $165.20; L. H. Wilson, 027-0, $30 (two awards); A. Wittmann, 454-0, $32.60.

Retirements

CONVAIR

BUJKOVSKY—Gustav J., Dept. 563-0. Seniority date May 8, 1961, retired Oct. 30.

COOK—Harold, Dept. 250-2. Seniority date Oct. 27, 1965, retired Oct. 30.

DAYTON, Charles E., Dept. 761-0. Seniority date April 20, 1950, retired Oct. 30.

FETTERLY, Robert E., Dept. 195-9. Seniority date May 2, 1951, retired Oct. 30.

HARPER—Melvin C., Dept. 019-0. Seniority date Jan. 31, 1947, retired Oct. 23.

HAYWARD—Robert L., Dept. 533-1. Seniority date June 15, 1951, retired Oct. 16.

MEGOWN—William H., Dept. 400-1. Seniority date Oct. 17, 1946, retired Oct. 7.

MILLER—Edwin, Dept. 204-2. Seniority date Oct. 24, 1950, retired Oct. 30.

TARTAR-William J., Dept., 562-2. Seniority date Aug. 18, 1954, retired Oct. 30.

WALLMAN—Charles, Dept. 149-0. Seniority date Aug. 17, 1936, retired Oct. 30.

WILLIG—Robert W., Dept. 002-0. Seniority date Oct. 9, 1946, retired Oct. 30.

WIRE—Norman L., Dept. 759-0. Seniority date July 18, 1932, retired Oct. 30.

WISENBERG—Frank J., Dept. 733-0. Seniority date Jan. 16, 1956, retired Oct. 30.

ELECTRO DYNAMIC

NEWELL—Arthur A., Dept. 422. Seniority date Aug. 3, 1956, retired Nov. 1.

"Cost Reducers"

CONVAIR

15-award pin—D. R. Noon, Dept. 027-0.

10-award pin—W. R. Stanley, Dept. 810-0.

5-award pins — R. C. Beezley, Dept. 002-0; R. Nelson, 962-3; N. T. Keith, 146-3; R. M. Darling, 149-5; J. F. Strazz, 810-0; W. R. Stanley, 810-0; B. A. Dill, 565-3.

Rider-Driver

CONVAIR

RIDE WANTED—From Chula Vista, Main and Melrose area, to Lindbergh Field plant, 3:30 p.m. to midnight shift. Call Bill Peet, ext. 1656 LF or (home) 420-8126.

Personals

CONVAIR

I wish to express my appreciation to all my friends for their expressions of sympathy and help when my husband, E. R. "Pete" Peterson, passed away.

Elizabeth J. Peterson

* * *

Thank you for your thoughtfulness in our time of bereavement.

Irma, Danny, and Debbie Sanner

* * *

We wish to express our thanks for the many cards and flowers received and in particular, for the blood donated during successful open heart surgery of George Trimlett of engineering. Since there is an excess of blood, any GD employe in need during the coming year should contact us.

George Trimlett and Family
Dept. 532-0

* * *

We wish to express our gratitude to the many friends at Convair for the kind expression of sympathy during the loss of our loved one.

Mrs. Russ Joseph and family

* * *

ELECTRO DYNAMIC

I wish to express my gratitude and thanks to my friends from Dept. 422 for their expression of sympathy and thoughtfulness as a result of the loss of my mother.

Don Miller

Deaths

CONVAIR

CRIVELLO — Fred, Dept. 223-3, died Nov. 7; survivors include his wife and children.

ENTER — Walter, retired Dept. 201, Jan. 1960, died Aug. 11.

HEROLD—Oscar J., retired Dept. 460, June 1967, died Oct. 24.

MATLOCK — William G., Dept. 057, died Oct. 23. Survived by his wife, Dorothy, five brothers, and three sisters.

SANNER—John E., Dept. 989-4, died Oct. 24; survivors include his widow, Irma; a son, Dan; and a daughter, Debbie.

WILLIAMSON—Gordon I., Dept. 979-3, died Nov. 8; survivors include his wife, Ethel, and a daughter.

General Dynamics News

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Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P. O. Box 1950, San Diego 92112.

'Operation Perform' Established To Streamline DC-10 Work Flow

"Operation Perform" has been instituted in Convair Aerospace Division's DC-10 program to help streamline the sequence and flow of work on the tri-jetliner fuselage manufacturing line in preparation for a peak delivery rate of two ship-sets per week.

Bill Wise, manager of industrial engineering, has appointed Don Evanson as coordinator.

"Our goal is to see that each assigned task is accomplished in proper sequence, within budget, and on or ahead of schedule," Wise said.

Evanson said each manufacturing item is being "proofed out" by a floor team that includes the factory foreman, methods engineer, and representatives from production engineering, production control, and quality assurance. Assistance also will be provided as needed by plant engineering, design engineering, and safety functions.

"Any production problem detected that can not be resolved by the floor team in two days will be documented on a corrective action request form," Evanson said.

"Each of these forms will be reviewed at succeeding higher management levels until a decision has been made. Corrective action then will be instituted as quickly as possible."

Evanson said the floor team is reviewing each manufacturing item and assembly station task to determine:

1. Proper sequence of installation tasks for movement on the assembly line every 2½ days.
2. Proper sequence of inspection as assembly progresses.
3. Optimum manpower requirements.
4. Changes needed for proper stationing of detail installation and subassembly tasks for a level workload.
5. Recommendations for method improvements.
6. Identification and cause of delay factors.

An Operation Perform daily review board is meeting at 8 a.m. each morning in the DC-10 control center in Bldg. 33 at Lindbergh Field to review current problems and delay factors that require immediate action.

Evanson said Operation Perform is expected to result in improved manpower efficiency and utilization, a reduction in delay factors, improved methods and schedule position, and establishment of optimum manufacturing sequence for a planned delivery schedule of eight fuselage ship-sets a month.

Xmas Dinner-Dance Scheduled Dec. 5

Dec. 5 is the date for Electro Dynamic Division's Christmas dinner-dance at the new Town and Country Convention Center, Town and Country Room.

A no-host social hour is set for 7 p.m. with char broiled top sirloin steak with all the trimmings at 8. Dancing will be from 9 p.m. until 1 a.m. with continuous music provided by two top bands.

Tickets, priced at $4.75 per person, are still available from all Management Club boosters.

M. E. Kriedeman, chairman, announced door prizes of trips, lodging both near and far, dinners, sporting event tickets, gift certificates, cameras and candies.

VENDING HDQS. MOVED AT LF

ARA vending machine headquarters at the Lindbergh Field plant has relocated to Bldg. 33, Col. B-5, near the employe tool stores area. ARA hours remain the same (6 a.m. to 3:30 p.m.) and inquiries should be directed to Don Stewart, ext. 1677 LF.

You Can Become Regular Bond Buyer For 50 Cents a Week

Births

CONVAIR

CALCOTE — Daughter Christina Kay, 7 lbs. 6 ozs., born Nov. 9 to Earl (Dept. 046) and Linda Calcote.

NEUMANN—Daughter, Shannon, 7 lb. 6 oz., born Nov. to Terry (Dept. 149-3) and Kathleen Neumann.

F-106s, F-102s Score High

(Continued from Page 1)

ons firing at the maneuvering targets, weapons loading, and the speed and accuracy with which intercept directors guided their pilots to the targets.

An F-106 "six shooter" aircraft, equipped with a new General Electric 20-mm Gatling gun, was displayed at Tyndall during the William Tell meet in a combined Convair Aerospace Division and Air Defense Command exhibit.

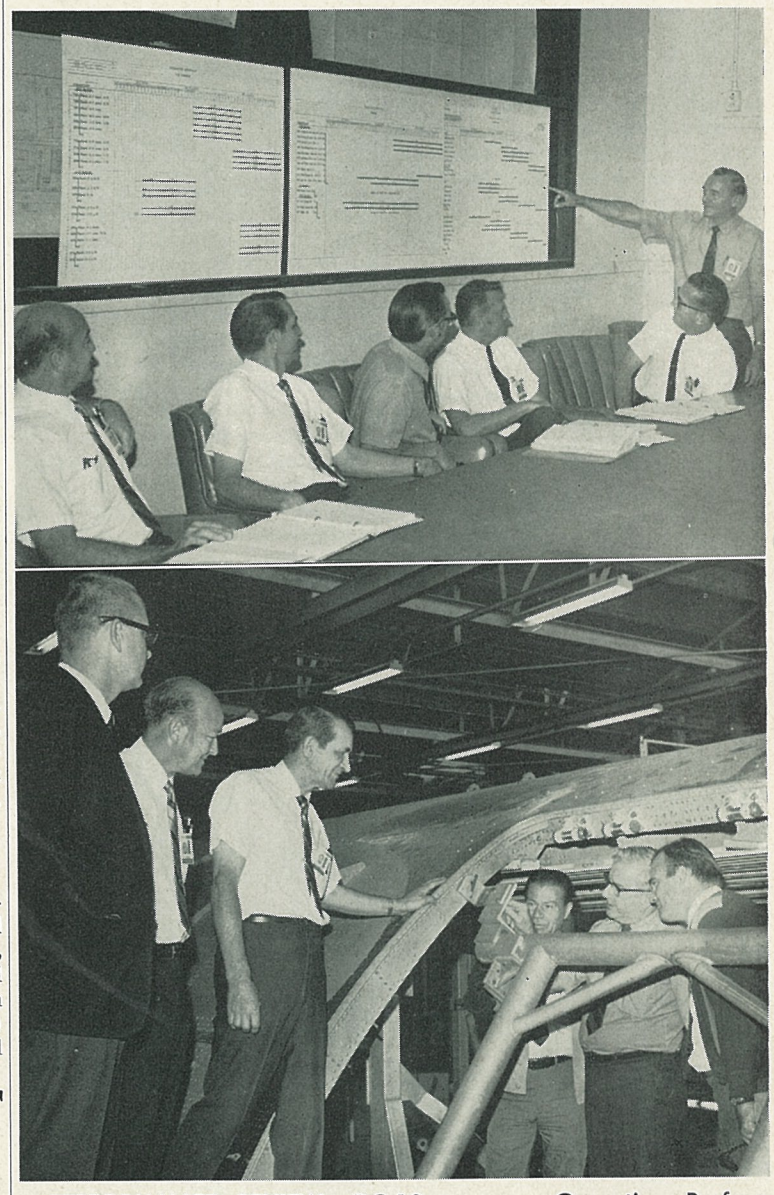
A film also was shown on the "six shooter" installation and ground and flight testing by Convair Aerospace and of subsequent testing of the system by the 4750th Test Squadron at Tyndall against towed targets and surface-to-surface guided missiles.

Ferguson said the "six shooter" plane and film attracted a lot of interest among F-106 crew members and others at the weapons meet. Copies of the film are being provided for additional showings at Air Defense Command Headquarters in Colorado Springs, the Defense Weapons Center at Tyndall, and the San Antonio Air Materiel Area.

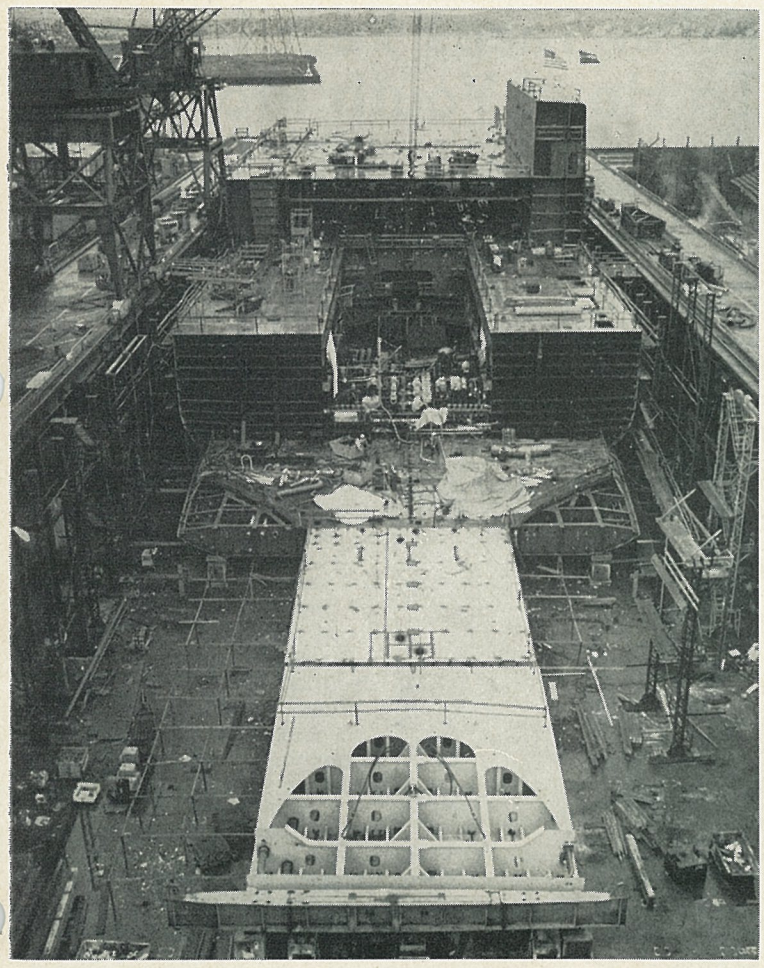
An air show held in conjunction with the William Tell-1970 meet featured performances by the Air Force Thunderbirds, precision flying of F-102s by the Wisconsin Air National Guard's 115th Fighter Group and of Canadian F-101s and a demonstration by the Army's Golden Knights precision parachute team.

A Fighter Pilots' Association annual meeting scheduled in Panama City, Fla., during the week of the interceptor weapons meet concluded with a banquet at which former senator Barry Goldwater and Lt. Gen. Thomas K. McGehee, Air Defense Command commander, were speakers.

Other Convair Aerospace Division representatives at the William Tell meet were R. E. Sommers, chief of customer service, and Joe Basquez, assistant marketing manager.



PERFORMANCE REVIEW—DC-10 program Operation Perform daily review board, top photo, is briefed by Don Evanson, right, coordinator, at morning session. Board members, from left, are Bud Swindall, group foreman; Bob Courtney, foreman; George Davidson, production control; Dick Solomon, program control; and John Pasich, tool manufacturing engineering. In lower photo, floor team members reviewing a cargo door tooling problem, from left, are Gil Reeves, production control; Swindall; Courtney; Jim Marries, quality assurance; Marsh McPherson, tooling planning; and Klaus Flitner, industrial engineering.



WORLD'S LARGEST — Revolutionary barge-carrying transport "Doctor Lykes" passed one-quarter construction mark Oct. 31 as shipbuilders of Quincy Shipbuilding Division established new yard construction record. First of three vessels which will be the world's largest dry cargo ships, "Doctor Lykes" will measure 875 feet in length and displace 50,900 long tons.

Quincy Yard Sets Lykes Ship Record

The world's largest cargo ship passed the one-quarter construction mark Oct. 31 as shipbuilders of the Quincy Shipbuilding Division set records to fulfill a promise to the Federal Maritime Administration.

Constructing the first of three revolutionary Lykes "Seabees," the shipbuilders passed the one-quarter milestone when they erected the 44th multi-ton section of the huge ship.

When completed, the ship, to be named "Doctor Lykes," will be comprised of more than 170 such house-sized sections which weigh as much as 200 tons each.

With the 44 sections in place, the structural weight of Doctor Lykes now stands at 4,613 tons—approximately 30 per cent of her eventual structural steel weight of 15,000 tons.

Last Sept. 14, the shipbuilders pledged to Andrew E. Gibson, Assistant Secretary of Commerce for maritime affairs, that they would complete erection of a total of 44 sections on the ship by the end of October.

They achieved their objective at 4 p.m. Oct. 31, establishing a record for the most tonnage erected in one month on any ship since General Dynamics opened the shipyard Jan. 1, 1964.

The construction record follows by just three days another mark set by the shipyard. On Oct. 28, the division delivered a new ship to the Navy after constructing her in a record-setting 21 months.

That ship, a fleet replenishment oiler named USS Savannah, was delivered 17 days ahead of schedule—the fifth ship in a row delivered on or ahead of schedule.

The Lykes ship now under construction is the first of three vessels which will be the largest dry cargo transports in the world. All three will be constructed by the Quincy yard.

Conceived by and being built for the Lykes Bros. Steamship Co. of New Orleans, La., the great ships will measure 875 feet in length and displace 50,900 long tons (2,240 pounds per long ton) fully loaded.

Described as revolutionary, the ships are attracting international attention because of what observers consider unprecedented versatility and economy.

Unlike standard merchantmen, the Lykes ships are designed to carry a wide range of cargoes in a variety of transport modes.

She can transport cargo in large barges, allowing them to service underdeveloped as well as developed ports; in containers which can be handled ashore by truck or train; free-standing cargo such as vehicles or helicopters; or a combination of all forms of cargo.

The ships are configured so that helicopters can operate from their cargo decks, so that barges can be loaded and off-loaded by a stern elevator, and so vehicles can be easily driven on or off.

When the keel for Doctor Lykes was laid this past July 15, Gibson at that time noted "the only thing conventional about this ship is that she floats."

During the keel-laying ceremony, Cong. Hastings Keith (R-Mass.) described the Lykes ships as "symbolic of the new U.S. merchant marine."

Doctor Lykes is scheduled for christening next June 5, and for delivery in late 1971.

General Dynamics Earns Special Treasury Plaque

General Dynamics has received a special Twin Seal Plaque Award from the U. S. Treasury Department in recognition of its 1970 Corporate - wide Savings Bond campaign.

Over 80 per cent of General Dynamics employes are investing regularly in Series E Bonds, buying through the automatic payroll savings plan.

Presented last month to President Roger Lewis by Mrs. Jeanie Smith, Mrs. U. S. Savings Bonds, the special award was given for the outstanding response to the successful campaign to boost participation.

The Twin Seal award features the Great Seal of the U. S. and Seal of the Treasury Department. A brass plate is inscribed "General Dynamics Corporation — for Patriotic Service—U. S. Savings Bonds Program — November 1970."

"We will be proud to display this special award," Lewis said, "for a campaign to which the men and women in our company responded so enthusiastically. We are proud to be involved in a program that concerns us so directly —one that benefits us as individual citizens just as much as it helps the nation."

PRAISE FROM U.S.—Roger Lewis, General Dynamics president, accepts Twin Seal Plaque Award from Mrs. Jeanie Smith, "Mrs. U.S. Savings Bonds," in recognition of employes' 80 per cent participation in bond buying by deduction.

People Mobility

Personnel Transfers Within GD

(Following are recent personnel transfers within General Dynamics. In parentheses are date when individuals joined the company.)

STANLEY H. LOGUE (1952) from Convair Aerospace-SD to engineering specialist, Electro-Dynamic-SD; **JESSE P. MOOREFIELD** (1966) from ED-Roch. to ED-SD as publications supervisor; **DR. ALEX STRASSER** from ED-Roch. to Stromberg-Carlson as medical director; **GEORGE POIRIER JR.** (1966) from Electric Boat to programmer, Quincy Shipbuilding; **DANIEL T. COLOZZI** (1965) from EB to programmer, Quincy; **JOHN P. CARTER** (1965) from EB to design engineer, Quincy; **KENNETH S. TELFER** from Convair-FW to senior design engineer, Convair-SD; **ARTHUR H. MANDALE** from Convair-FW to foreman, Convair-SD; **JOHN R. DUNCAN JR.** (1969) from Stromberg DatagraphiX to Convair-SD as patent counsel; **EDWARD J. CORRIGAN** (1962) from Canadair Limited to systems development specialist, EB; **ROGER A. LA FLAMME** (1959) from ED-Roch. to EB as quality control analyst; **GEORGE R. SEEWALD** (1967) from ED-SD to Convair-FW as senior quality control engineer; **JOHN W. PARRY** (1963) from Convair-SD to planning and control specialist, ED-SD; **CHARLES F. SMITH** (1953) from Convair-SD to planning and control specialist, ED-SD; **HARRY C. CHAMBERS** (1939) from ED-Pom. to assistant to the vice president and general manager, Convair-SD; **PETER H. SIMON** (1955) from ED-Pom. to EB as special assistant to the comptroller; **ALDEN W. ADAMS** (1960) from Convair-SD to EB as chief of technical publications.

CLYDE M. HOOPER (1942) from ED-SD to Convair-SD; **DAVID WILD** (1956) from ED-Roch. to publications writer, S-C; **NORMAN COOLEY** (1969) from Corporate Headquarters to S-C as staff assistant; **JAMES E. BOWEN** (1956) from ED-Roch. to program manager, ED-SD; **GEORGE P. DELP** (1960) from ED-Roch. to ED-SD as contracts manager; **CHARLES L. RETTIG** (1970) from ED-Roch. to contract administrator, ED-SD; **JOHN R. GRAVES JR.** (1939) from ED-SD to master schedules analyst, Convair-SD; **JOHN R. CASH** (1967) from Convair-SD to logistics program coordinator, ED-SD; **ELIZABETH MATSIC** (1953) from ED-Roch. to senior publications writer, S-C; **ROBERT BECCU** (1962) from ED-Roch. to S-C as an engineer; **HYMAN SELDOWITZ** (1956) from ED-Roch. to S-C as senior engineer; **DERMOT FUCITO** (1963) from ED-Roch. to senior engineer, S-C; **GARY L. DRAPER** (1956) from Convair-SD to ED-SD as industrial engineer; **HOWARD SHAFFER** (1962) from ED-Roch. to production engineer, S-C; **RICHARD SALTZGABER** (1969) from ED-Roch. to senior plant engineer, S-C; **ELWOOD K. FREE** (1966) from DatagraphiX to S-C as senior plant engineer; **FRANK H. McCLAIN** (1967) from ED-Roch. to technical illustrator, S-C; **RICHARD M. VECCHIO** (1955) from ED-Roch. to S-C as maintenance foreman; **GEORGE J. HAPPE** (1967) from ED-Roch. to senior publications writer, S-C; **WADSWORTH P. BOREK** (1954) from ED-Roch. to S-C as senior publications writer; **ROBERT H. ARVA** (1966) from ED-Roch. to senior production engineer, S-C; **RALPH M. CHAPMAN** (1964) from ED-Roch. to S-C as data systems engineer; **PATSY AMORESE JR.** (1951) from ED-Roch. to production planner, S-C; **RAYMOND R. CEDRULY** (1969) from ED-Roch. to S-C as senior production engineer.

DONALD R. PARDEE (1964) from Convair-SD to Corporate Headquarters as director of computer and electronic data processing consolidation; **CHARLES E. MANCHEE** (1958) from ED-Roch. to ED-SD as subcontract administration supervisor; **ANTONIO J. BIANCHI** (1953) from ED-Roch. to S-C as production engineer; **RAYMOND G. VANHEMEL** (1959) from ED-Roch. to engineer, S-C; **PAUL D. JORDAN** (1956) from ED-Pom. to ED-SD as program coordinator; **LEWIS R. VANOSTRAND** (1955) from ED-Roch. to foreman, S-C; **RONALD R. ROBERT** (1967) from ED-Roch. to S-C as senior engineering aide; **HAROLD M. CLASS** (1957) from ED-Roch. to manager of plans and programs, ED-SD; **GLENN B. CRANE** (1964) from ED-Roch. to publications supervisor, S-C; **RICHARD F. KROENING** (1968) from ED-Roch. to ED-SD as planning control supervisor.

SOVIET VISIT—Among those attending American Institute of Aeronautics and Astronautics meeting in Houston last month were two Soviet cosmonauts. Along with Edwin E. "Buzz" Aldrin they were shown General Dynamics exhibit on space programs. From left, Aldrin, the two cosmonauts, an interpreter and W. A. Roberts of Convair Aerospace Division.

S-C to Merge Railway Phone System

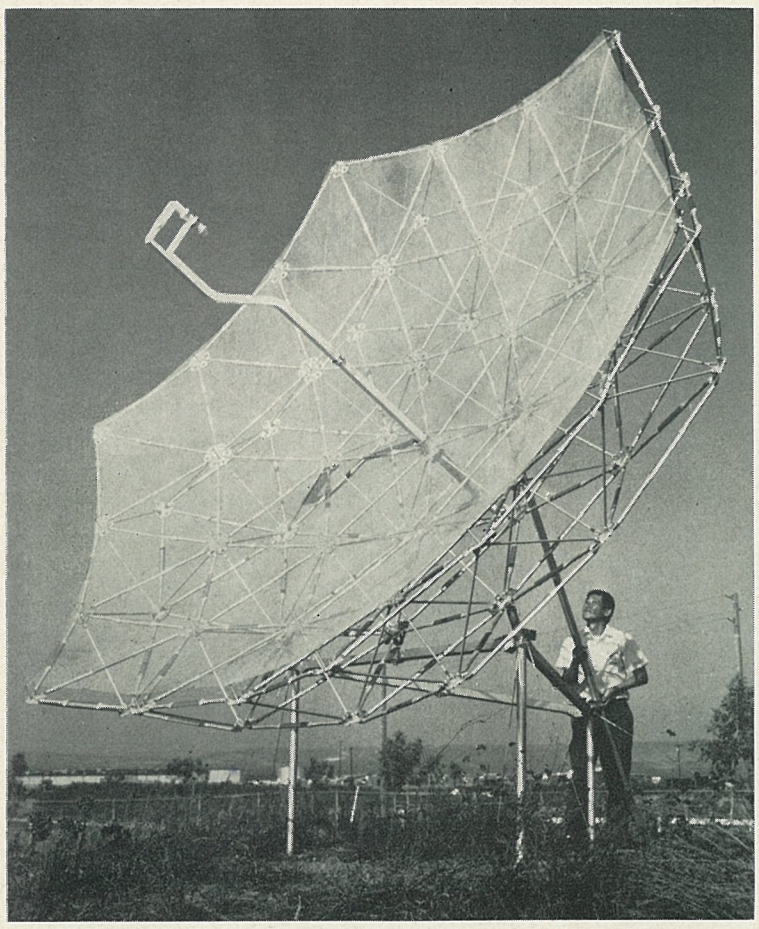
The sprawling operations of the nation's newest and longest railroad will be linked by more than rails.

The Burlington Northern has awarded a $1.2 million contract to Stromberg-Carlson to merge and enlarge the railroad's telephone systems into an integrated network. It will be the largest privately owned 4-wire telephone communication network in the world.

Burlington Northern was formed earlier this year through the merger of the Great Northern, Northern Pacific and Burlington and Quincy. The new road, which has nearly 24,000 miles of track, operates in 17 states north and west of Chicago and in the Canadian provinces of British Columbia and Manitoba.

Stromberg-Carlson will supply three new tandem switching centers and enlarge five existing Stromberg-Carlson-equipped centers. The resulting network will link 46 private automatic branch telephone exchange (PABX) systems along the railroad.

Stromberg-Carlson 4-wire switching systems had previously been installed for two of the predecessor railroads, the Great Northern and Northern Pacific. New centers will be installed at Great Falls, Mont., Superior, Wisc., and Fargo, N.D.



ANTENNA CHECKOUT—Wally Akimoto looks over 15-foot self-expanding ground-transportable antenna produced by Convair Aerospace Division for NASA's Goddard Space Flight Center. The antenna has since been used in a demonstration of voice communication through a satellite 22,000 miles away.

Self-Expanding Antenna Used For Communication Via Satellite

A 15-foot ground-erectable antenna developed by Convair Aerospace Division recently was used in a demonstration at NASA's Goddard Space Flight Center in Greenbelt, Md., for sending and receiving voice communications through Applications Technology Satellite-3 in synchronous orbit over South America.

Wally Akimoto and Ray Garriott, Convair Aerospace-SD project engineers for the antenna, participated in the demonstrations and later were presented NASA "space communicator" pins as a token of their communication through the satellite.

Akimoto said transmissions were sent directly from the transportable ground station transceiver and antenna through the satellite and back over a 44,000-mile loop as well as for transmissions between NASA - Goddard and a Rosman, N.C., ground station through the satellite.

"The antenna performed within our expectations," he said. "It was just like listening to a telephone conversation." There was about a ¼-second delay in transmissions being returned directly from the satellite.

The two Convair Aerospace engineers demonstrated deployment and erection procedures for the antenna for NASA-Goddard personnel before the demonstration of its use.

A simple compass and protractor were used in pointing the antenna toward the satellite. Garriott said dismanteling and repacking of the self-expandable antenna and other equipment used in the demonstration took about an hour.

NASA plans to use the antenna in Brazil and other South American countries to demonstrate satellite communications. Akimoto said the antenna also may be used in Lima, Peru, to support a barium ion experiment to be conducted by a German scientific group in an analysis of the earth's magnetic field.

The 15-foot "portable" antenna was included in a General Dynamics exhibit in October at the annual meeting of the American Institute of Aeronautics and Astronautics in Houston.

Russian cosmonauts visiting the exhibit there were briefed on the antenna's operation by Akimoto through an interpreter.

BUSINESS SCHOOL HEARS CARLSON

R. E. Carlson, manager of internal auditing for Convair Aerospace-SD, was guest speaker Nov. 12 at a luncheon meeting of the California Association of Business School Officials in the Holiday Inn in La Jolla. He spoke on "The role of the internal auditor in industry today."

COST SAVER—William G. Lux, center, a senior reliability engineer in Dept. 144-1, admires Convair Aerospace-SD's first 25-credit Cost Reduction Achievement pin he received for having four Employe Suggestions and 21 Cost Reduction Projects approved this year for savings estimated at $137,285. Lyman Josephs, left, vice president and general manager, made award presentation as L. I. Medlock, right, director of reliability control, looked on.

AC-21 Launch Scheduled At Complex 36B

Convair Aerospace Division's Atlas-Centaur 21 this week was scheduled to launch NASA's Orbiting Astronomical Observatory-B, the world's largest space astronomy telescope and the United States' heaviest scientific satellite which was to be designated OAO-3 after successful placement in orbit.

From high above earth's atmosphere in its planned 466-mile circular orbit, OAO-3 will observe distant stars and galaxies through its 36-inch telescope with a detail previously unobtainable in space astronomy. It is scheduled to orbit the earth about every 100 minutes while inclined 35 degrees to the equator.

Atlas-Centaur 21 (Atlas SLV-3C 5003 and Centaur 18D) was to be launched from Complex 36B at the Eastern Test Range.

Daniel Sarokon was AC-21 launch conductor. Assistant launch conductors were J. L. Johnson for instrumentation systems, J. M. Kechele for mechanical systems, D. J. Merritt for guidance and control systems, and J. H. Sylvester Jr. for electrical systems.

Representatives from Convair Aerospace - SD's Kearny Mesa plant on hand as preparations for the launch progressed included K. E. Newton, director of launch vehicle programs; Deane Davis, assistant director - technical; Bob Foushee, Centaur D program manager; Karl Kachigan, chief engineer; and Ed Lindgren, AC-21 project engineer for the Centaur program office.

OAO-3 was scheduled to be placed in an orbit similar to that of OAO-2, which has far exceeded its objectives since its launch by Atlas-Centaur 16 in 1968, but the two observatories were to pass the equator simultaneously on opposite sides of the earth.

Like its sister observatory, OAO-3 is to study young hot stars—but with much more precision. It also is to be used in an intensive study of the composition of interstellar dust. Through it, astronomers expect to learn more about the birth of stars and the future of our galaxy.

The 36-inch telescope on OAO-3 has been named Goddard Experiment Package as a tribute to the late Dr. Robert H. Goddard, the "father of modern rocketry." Principal investigator is Dr. Albert Boggess of NASA's Goddard Space Flight Center. Periodic observations for "guest observers" in the U.S. and other countries also are scheduled beginning about three months after the launch.

OAO-3 weighs 4,680 pounds, is 10 feet tall, contains 328,000 parts, and is equipped with 21-foot-wide solar panels.

OAO-2, which gave astronomers their first sustained look at the universe from above the distortions of the atmosphere, weighs 4,400 pounds. Its largest telescope is a 16-inch model, half the size of that in the OAO-3.

The OAO-3 is the third in a series of four observatories planned by NASA. OAO-1 was launched in 1966 by an Atlas-Agena but failed shortly after it was placed in orbit due to a power supply system malfunction.

OAO-4 is scheduled for use beginning late in 1971 and will carry a Princeton University 32-inch-aperture high-resolution telescope and an X-ray experiment for two British universities. It is to be launched by Atlas-Centaur 22.

NASA currently is investigating the feasibility of future deployment of a Large Space Telescope (LST) which would weigh more than 20,000 pounds and would have a primary mirror about 120 inches in diameter. Officials say it could be launched by existing launch vehicles or by space shuttle vehicles during the latter part of this decade.

Be sure to use the ZIP code when addressing mail. It speeds up delivery!

Fuller Takes Year Leave To Head Youth Program

Henry W. "Hank" Fuller, a supervisor in the Convair Aerospace-SD material department (840-0), has been given a year's leave of absence to serve as youth opportunity program director of the Mayor's Council on Youth Opportunity for the City of San Diego. He will serve as the appointee of Mayor Frank Curran.

CIVIC SERVICE—H. W. Fuller of Convair Aerospace-SD material department will be new youth opportunity director of Mayor's Council.

In his new position, Fuller will determine needs and develop financing for year-long educational, cultural, and recreational programs for youth.

"The concept is to provide young people from the less chance areas with opportunities normally afforded those in other areas through field trips and a variety of educational and recreational programs," Fuller said.

"A good example was the swimming instruction programs provided last summer through use of portable swimming pools. Cultural programs and field trips can give these young people a chance to see what the world really is like outside the neighborhood where they live."

Fuller, a native of Brawley, attended San Diego State College and played basketball for the Harlem Globetrotters. He later served in the Army as a leadership training school instructor and was employed as an electronics technician at North Island Naval Air Station.

He joined Convair in 1957 as a stock handler.

Fuller has served on the Convair Employes Con-Trib-Club committee for five years and has been the Con-Trib-Club observer for the Mayor's Council on Youth Opportunity for two years.

Fuller has received two major Employe Suggestion awards — a maximum $5,000 award and a $1,033 award — for suggestions that made possible rework and reuse of surplus electronic components and electrical equipment cabinets instead of purchasing new ones. Savings to the company from the two suggestions was estimated at $86,478.

Roger Brown, acting director of industrial relations for Convair Aerospace-SD, said the company is pleased that a man of Fuller's capabilities has been selected for the Mayor's council.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

Q—Is there any appeal machinery available in case an Employe Suggestion is turned down but the suggester is not satisfied that his idea has been given a proper hearing?

A—Yes. There is an independent appeal board and any manager can request reopening a case. The suggester should consult his supervisor.

★ ★ ★

Q—Can anything be done to see that vending machines are stocked to serve second shift and weekend employes?

A—Non-pastry machines are regularly stocked at the end of the first shift to assure availability. Soon a new type of pastry that does not spoil as quickly as the present items will be introduced on a trial basis.

★ ★ ★

Q—When I asked Con-Trib-Club if my total contribution could be sent to an organization of my choosing I was told this is not possible. If I withdraw from Con-Trib will pressure be brought to bear on me?

A—Membership in Con-Trib-Club is voluntary and there should be no pressure. Donations are tax deductible and to maintain this status Con-Trib must assure that the organizations benefitting have the proper federal and state exemption. Some charities, though worthwhile, do not have this standing and if members specify them this places the entire Con-Trib-Club in jeopardy. Further, to permit specifying particular charities is unworkable administratively.

★ ★ ★

Q—During the recent disastrous brush fires Canadair's CL-215 water bomber was used but not nearly to its full extent when full utilization would not only have saved property and watershed but offered striking demonstrations of the plane's capability. Why?

A—General Dynamics offered the use of two CL-215s, at Company expense. One plane was used with excellent results, scooping water from the ocean and dropping on Los Angeles area fires. However, later, the Forestry Service consented to use the aircraft only if loaded with fire retarding chemicals. GD again cooperated, even though it was far less than optimum utilization. Considerable press and TV publicity was obtained, though certainly not as much as would have accompanied full use of both planes scooping water in the role in which they specialize.

Space Shuttle Meet Hosted by Division

Convair Aerospace-SD was host last Tuesday (Nov. 24) for the NASA space shuttle monthly program review—first time for such a review outside Houston.

Attending were Robert Thompson, NASA shuttle program manager from the Manned Spacecraft Center in Houston; Roy Godfrey, manager of the shuttle program office at NASA's Marshall Space Flight Center; and other NASA, Air Force, and contractor representatives.

The visitors also were guests of the division Monday (Nov. 23) for a series of briefings on other division programs and for tours at the Kearny Mesa and Lindbergh Field plants.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 KM. Deadline for next issue of GD/NEWS is Dec. 8. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

ARCHERY—Reorganizational meeting, 7:30 p.m., Dec. 8, clubhouse room C.

BADMINTON—Play 7-10 p.m., Mondays, Federal Bldg., Balboa Park.

BICYCLE CLUB—Mission Bay 12-mile ride, 2 p.m., Dec. 6. Lakeside loop, 25-mile tour, 9 a.m., Dec. 12. 50-mile north county ramble, Dec. 26. Call Bob Williams, ext. 1148 LF for information.

BONAIR FLYERS — Meet 7:30 p.m., ec. 3.

BRIDGE — Duplicate bridge sessions, 7:30 p.m., each Friday.

CAMERA CLUB — Meet 7:30 p.m., Dec. 6.

CERAMICS — Meet 9 a.m.-noon and 7-10 p.m., Tuesdays and Thursdays.

CHESS—Play 7 p.m., tonight (Dec. 2).

CHORUS—Rehearsals 7:30 p.m. each Monday. Now rehearsing for a Christmas carol tour.

COINEERS—Meet 7:30 p.m., Dec. 14.

DELTA DIVERS — Meet 7:30 p.m., Dec. 9.

FENCING—Fencing team will participate in San Diego Fencing Invitational Tourney, 10:30 a.m., Dec. 6.

FISHING—Potluck 6:30 p.m., meeting 7:30 p.m., Dec. 15, Gillespie Field Clubhouse.

GARDEN CLUB—Meeting 7:30 p.m., tonight (Dec. 2) Floral Association Bldg., Balboa Park.

GOLF — Annual plant championship Dec. 24 Cottonwood Country Club.

HEALTH CLUB—Open 9:30 a.m.-10 p.m., Monday through Thursday; 9:30 a.m.-9 p.m., Fridays; 9 a.m.-noon, Saturdays; "women only" weekdays, 9:30-11 a.m.

HI-FI MUSIC—Meet 7:30 p.m., Dec. 8.

ICE SKATING—GD family skate night 6:15-7:45 p.m. each Thursday, House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1 (includes skates).

MINIATURE RAILROAD—Work session Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD — Work sessions 7 p.m. each Tuesday, CRA Missile Park.

PISTOL CLUB—Shoot 9:15 a.m., Dec. 13, S. D. Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB — Meeting 7:30 p.m., Dec. 3.

RIDING CLUB — Meeting 7:30 p.m., Dec. 9.

RIFLE CLUB — Senior shoot 7 p.m., Dec. 9. Junior shoot 9 a.m., Dec. 6. Gillespie Field range.

ROCKHOUNDS — Meeting 7:30 p.m., Dec. 9.

SCULPTURE — Workshop sessions 7:30-10:30 p.m. Mondays.

SPORTS CAR CLUB — Meeting 7:30 p.m., Dec. 9.

SQUARE DANCE — Dance 8-10 p.m., Thursdays.

STAMP CLUB — Meeting 7:30 p.m., Dec. 10.

TABLE TENNIS—Play Saturdays, 10 a.m.-4 p.m.

TOASTMASTERS—Convair Toastmasters meet 4:30 p.m., each Wednesday. Dynamic Toastmasters meet 5:30 p.m. Thursdays.

Employes Offered Free Wingo Games

A free wingo game is being offered each Convair Aerospace-SD employe during the month of December at the new wingo facility at 8950 Clairemont Mesa Blvd., near the Kearny Mesa plant.

Pete Beyrer of the CRA staff said employes can receive their free game by showing their badge. The free games can be played from 6 to 8 or 10 to 12 p.m. weekdays or from 1 to 11 .m. weekends. (League shooting s scheduled from 8 to 10 p.m. on weekdays.)

Wingo is a new indoor shooting game somewhat like trap or skeet shooting in which participants shoot at hollow ice balls being launched toward them. Special .20-caliber Winchester rifles and ammunition are used along with electronic and computerized firing and scoring systems.

Beyrer said a CRA wingo league may be formed early next year if interest in the new shooting sport warrants.

CRA Golfers Collect Turkeys in Tourney

Holiday turkeys were presented o 18 CRA golfers at the November tourney held over Carlton Oaks links.

Low gross honors went to Bob Kaminsky and Ken Eastin, both 77, and Ralph Way, one shot back.

Low net honors went to Stormy Kincaid (70), Russ Davis (71), Jack Durcan (72), first flight. Ray Demitrowicz (66), Carl Leonard (69), Tobe Hunley (69), second flight. Manny Gonzales (66), John Santone (67), Jack Getz (71)), third flight. Will Coffey (66), Jerry Stephensen (67), Roger Cyr (68), fourth flight.

CLOWN AT WORK — Jimmy Corduan, 6, and his 4-year-old sister Terry Ann, right, (grandchildren of Marilyn Sorcinelli, Dept. 027 secretary) are proud as punch to be photographed with Melvin Button.

'Our Clown'

Behind Paint Is Mel Button

Melvin H. Button, Dept. 027, assembler, started "clowning around" in 1954 and now it's become a habit. Although caught in the act many times, Button refuses to play it straight. A bag of treats, a happy smile, and an instigator of countless games and pranks are his trade-marks.

Button, best known among General Dynamics' children, has been the unofficial "official clown" at General Dynamics picnics over the past 16 years. Drafted into the clown career for a department picnic, he is still using the original home-made outfit and make-up donated by his supervisors.

An expert now in the treasure hunt, no youngster leaves empty handed. The smallest children have learned to "fly" to the finish line in the 20-yard dash, with a little help from their friend. Seen participating in the three-legged race and drenched with water from balloon-breaking contests, Button said, "I enjoy the work."

In the early years, Button's appearances were departmental. However, recently he has been performing at Management, CRA and Stromberg DatagraphiX-sponsored picnics.

"I guess I'm a clown at heart and that's why I was drafted in the first place."

Though he has had no professional training, with five children of his own he has had a "lot of practice."

Archery Club Reorganizing

A reorganizational meeting for the CRA Archery Club has been scheduled for 7:30 p.m. next Tuesday (Dec. 8) in Room C at the CRA Clubhouse.

Al Phipps, commissioner, said items for discussion will include club organization, plans for instruction for beginners, future shoots and hunting outings, and a novelty type turkey shoot.

The turkey shoot has been scheduled for 10 a.m. Sunday, Dec. 20, on the CRA archery range east of Missile Park. Phipps said it will be open to all employes and members of their immediate families. Turkeys will be awarded on a "luck basis."

Additional information about the club and its activities can be obtained by calling Phipps, ext. 1269 KM or (home) 295-8194.

SPORTS CAR CLUB TO VIEW MOVIES

CRA Sport Car Club's Dec. 9 meeting will feature two films, "1969 Grand Prix of Japan" and "1970 East African Rallye." All General Dynamics sports car enthusiasts are invited to attend the 7:30 p.m. meeting in the CRA Clubhouse.

Dynamics Chorus Plans Carol Tour

The General Dynamics Chorus will make its annual Christmas carol tour to three local hospitals the week before Christmas. Scheduled are visits to Children's Hospital on Dec. 14, Naval Hospital on Dec. 16, and Mercy Hospital on Dec. 17.

Jim Pate, commissioner, said the Chorus will make a special effort to visit the rooms of General Dynamics employes and relatives at each of the hospitals. Arrangements can be made by phoning Pate at ext. 1730 KM.

Employes and family members wishing to join the Chorus may do so by attending rehearsals from 7:30 to 9 p.m. Mondays in the CRA Clubhouse. Jim Rogers is the choral director.

Basketball Play Begins Tonight

CRA Plant League basketball teams begin their 1970-71 seasons with practice games tonight, tomorrow night, and Sunday at Municipal Gym.

Fast-break Wednesday league games are scheduled tonight (Dec. 2) with Underbrush playing Electro-Dynamic at 6:30, Soul Survivors taking on Aero at 7:40, and Centaur vs. Plant 19 at 8:50.

Slow-break league practice games tomorrow will pit GASP against DatagraphiX Material at 6:30, Oinkers and DatagraphiX Finance at 7:40 and Gobblers vs. Pot Luck at 8:50.

Sunday fast-break league games (Dec. 6) will have the Boogaloos taking on the Roadrunners at 1 p.m. and the Cosmo Bums tangling with Processing at 2 p.m.

First-half league play begins for the Wednesday fast-break league on Dec. 9, for the slow-break league on Dec. 10, and for the Sunday fast-break league on Dec. 13.

'Tora!' Film, Hockey Tickets on Sale

Reduced-price tickets for a 2 p.m. Dec. 12 matinee of "Tora! Tora! Tora!" at the Loma Theatre are on sale at employe benefits and CRA outlets. Tickets for the filmed story of the Japanese attack on Pearl Harbor are $2 (a 50-cent reduction).

Also available are reduced-price tickets for the 8 p.m. Dec. 12 hockey game between the San Diego Gulls and the Portland Buckaroos at San Diego International Sports Arena. Tickets are $2.25 and $2.75 (a 75-cent saving on each).

CRA Fencers Ready For Invitational

CRA Fencing Club members are preparing for participation in the 11th annual San Diego Fencing Invitational tournament to be held beginning at 10:30 a.m. Sunday (Dec. 6) at Grossmont College.

Electric foil scoring units will be used. Spectators are invited and there is no charge for admission.

Mike Hurley, commissioner, placed third in the men's competition last year and his wife, Barbara, was second in the women's final standings.

MODEL "SHOOTING"—Jim Mildice, commissioner, left, and Al Oehler of CRA Camera Club get set to "shoot" pretty models at Mission Bay Photo Festival as others from club look on. Members of CRA club helped stage annual event.

Softball League Champs Honored at Awards Dinner

Trophies were awarded to winners of CRA slow-pitch softball plant leagues at an award dinner Nov. 20 in the Lindbergh Field executive dining room.

DatagraphiX Reds had won the overall CRA championship by defeating the Plant 19 All Stars 4-2 in a final playoff game after the season ended.

GD/E Bombers won the Tuesday League crown by winning the first half of season play with a 6-1 record, tying the Super Gnats for the second half wtih a 6-1 standing, then defeating the Super Gnats 13-7 in a playoff game.

Pete Beyrer, CRA softball leagues manager, said the GD/E Bombers' Bob Sileneck, who had hit 30 home runs in 25 games, was without doubt the best slugger a CRA slow-pitch team has ever had. Colleagues said Sileneck also had been walked many times by opposing pitchers to keep him from scoring more.

AF Plant 19 All Stars went undefeated in 15 straight games to win the Wednesday League title. DatagraphiX Reds had a 16-2 record during the season to win the Thursday League crown.

The Plant 19 All Stars defeated GD/E Bombers 9-7 in two extra innings in the first of two playoff games to determine the overall plant championship. DatagraphiX Reds then won the championship by winning their game against the All Stars.

Hitless Wonders won six straight games in a post-season tournament for which trophies also were awarded. The GD/E Bombers finished in second place after being edged 4-2 by the Hitless Wonders in their final game.

Flower Show Draws 1,200

Flower fanciers, 1,200 strong, enjoyed CRA Garden Club's Fall Show which featured chrysanthemums, roses, potted plants and arrangements.

The annual event, held recently in Balboa Park, included nearly 450 entries by employes, retirees, and members of their families.

Charles (Dept. 761) and La Vonne (Dept. 110) Splinter dominated the show with five best of show awards in single blooms and arrangements.

Other best of show winners included Albert and Marge Hornby, Ray and Lucille Sharman, Felix and Marie White, all retirees; Henry and Margaret Boyd, Carolyn Buman, Bill Spann, Mrs. C. D. McCarty, Lisa Sinnott.

Turkeys were given for all best of show categories with merchandise awards and ribbons being presented to first, second and third place winners.

CRA Pistol Packers First in IRC Shoot

A four-man team from CRA Pistol Club took first place in the center-fire event in an Industrial Recreational Council shoot recently on the Police Department pistol range. Firing for CRA were Jim Halfacre, Gerry Lehrer, Harry Black, and Charles Kropp.

Kropp was advanced from expert to master class standing in the CRA club after firing 290 in the Nov. 8 match at the police range. He then fired 285 in the Nov. 22 meet for first place in shooting against other master class competitors.

Fourteen club members competed in both the Nov. 8 and Nov. 22 meets. Red Schneider was first in master class with 296 and Jim Thomas was first in sharpshooter category with 201 on Nov. 8.

Leaders in the center-fire event were Kropp with 275 and Lehrer with 262. Halfacre won a Thanksgiving turkey in a special shooting event.

In the Nov. 22 match, Halfacre was second in master class with 282. Other winners were Leon Thomas and Dick Sutton in expert class and Ferdy Carranza and Jim Thomas in sharpshooter firing.

Camera Club Plans Election of Officers

CRA Camera Club will elect officers for the coming year at a Dec. 6 meeting in the Photo Arts Bldg., Balboa Park.

To highlight the evening members will present short slide shows. Two travel films will be viewed.

Winners of the final quarterly contest for 1970 were Art Mason, Al Oehler, Ken Rinker, Clark Winsor and Erich Wolf, color slides "A" division; Charlotte Costalanos and Alice Oehler, color slides "B" division; Bill Paine and Winsor, black and white prints.

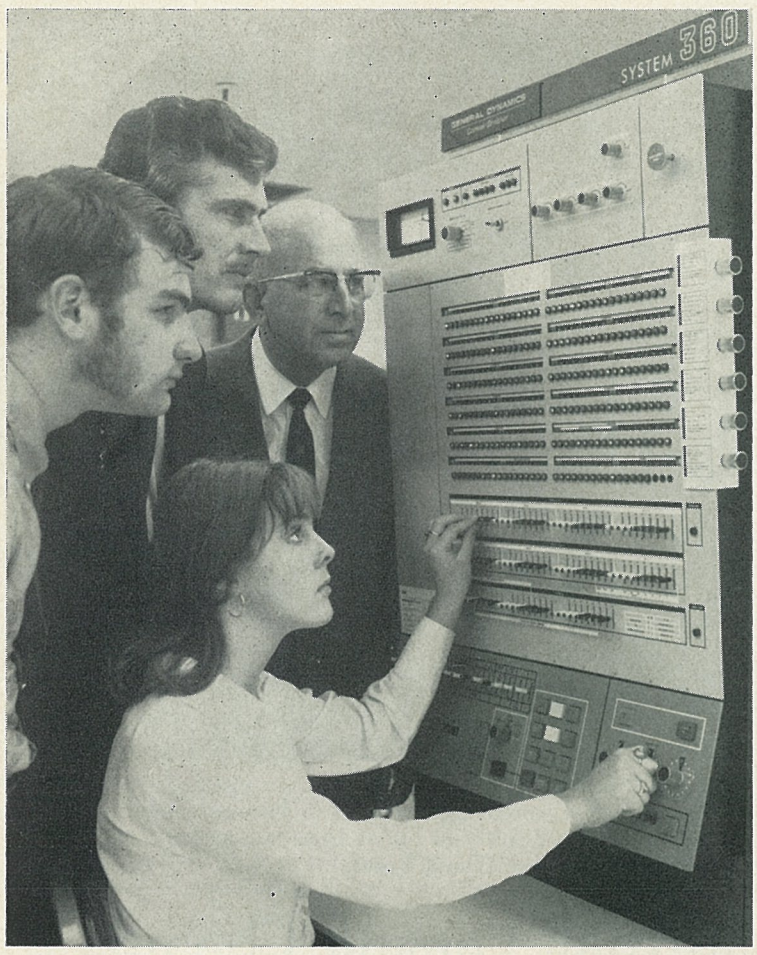
Annual Golf Championship Slated For Cottonwood

CRA Golf Club and Convair Management Association are anticipating an exceptional turnout for the final round in the annual plant championship tournament scheduled for Dec. 24 at Cottonwood Country Club.

A 7:30 a.m. "shotgun" start awaits ball chasers playing the Ivanhoe course. Assigned starts, beginning at 7 a.m., are available on the Monte Vista links.

Tournament chairmen Terry Kell and Bob Kaminsky report that all GD golfers can compete for prizes. However, to be eligible for the championship, entrants must have played in three previous CRA tourneys.

Prizes will be awarded in special events, ladies, and guest flights. Reservations may be made through Kell, ext. 2418 LF and deadline is Dec. 21.



COMPUTER COUNSEL—Jan Olson, 16-year-old daughter of Tom Olson of Convair Aerospace Division and a student in computer programming course for youth, studies operation of IBM System 360 master console. Looking on, from left, are Dan Bahrt, also a student; Lee Harris, an instructor; and Lloyd Boyles, course chairman.

Teenagers Learn Computer 'Talk' In Class at Kearny Mesa Plant

Sixty teenagers are "coming to school" at Convair Aerospace Division's Kearny Mesa plant from 7 to 9 p.m. each Thursday to learn the rudiments of business computer programming.

Convair Management Association and the division's data systems Dept. 170-1 are sponsoring the course, which began last month and is expected to take about eight months for completion.

Lloyd Boyles, Dept. 170-1 data systems report coordinator and chairman for the course, said the youth enrolled are being taught COBOL (common business oriented language) and will prepare and run up to four individual programs on the division's IBM System 360 computer.

Instructors for the course, all members of the Management Association and all Dept. 170-1 computer programmers, are Norma Gooley, Agnes Swartz, Bill Parks, Lee Harris, and Jim Blethen.

Boyles said the teenagers are all "tremendously interested and highly motivated."

A majority are high school seniors that were selected for the course by counselors in 11 Grossmont High School District schools. The others are sons and daughters of Convair Aerospace Division employes.

The youngest, Michael Gilley, 13-year-old son of Dept. 131-1 plant security guard J. C. Gilley, received special permission to take the course after he had spent much of his spare time for two years studying computer manuals his father had borrowed from data systems personnel.

Boyles said the current course is an outgrowth of a series of similar programs that have been given since 1965 when G. O. Withem, chief of data systems, developed a course for a Boy Scout Computer Explorer Post at Granite Hills High School.

Notices on the course now being given were distributed to the high school district counselors and an announcement was included in a Management Association flyer.

"We had to turn down 15 students who wanted to enroll because we felt 60 were about as many as we could handle at one time and because of space limitations in our classroom in Bldg. 26," Boyles said.

Classroom instruction is handled on a rotation basis by the five instructors — with two instructors present at each of the weekly sessions to insure adequate student assistance and proper course continuity.

Boyles said the course is not designed primarily to make computer programmers of the students but to give each a working knowledge of how computers can be used for problem solving in whatever career field he chooses to enter.

No charge is made for the training with only cost to the student being $3.25 for manuals used. Each student successfully completing the course will receive a certificate from the Management Association.

Ex-County Champion Wins Table Tennis

Les Craig took home a holiday turkey in the recent CRA Thanksgiving table tennis tournament, defeating Art Jenkins, 21-15 and 21-13. A former San Diego county champion, Craig, Dept. 229, parts control analyst, has been a top contender in CRA table tennis leagues for the past 23 years.

Giorgio Tonozzi, resident representative from Aerfer, Naples, Italy working on the DC-10 project, downed Judy Wertz, 21-12 and 21-13 to win his holiday bird in the "B" bracket competition.

Tonozzi described ping-pong as a popular sport in Italy where he began playing as a boy on a home-made table. He developed his skills through his church organization, where Italian children spend mudch of their leisure with supervised activities comparable to our Boy's Clubs.

Convair 'Alumni' Meet at Lunch To Reminisce of 'Old Days'

Forty retirees from Convair Aerospace-SD and its predecessor divisions got together for lunch Nov. 10 at the Nordic restaurant on Midway Drive.

"We had a lot of fun just reminiscing," said Johnny Hopman, who retired early this year after 35 years service. "We were really surprised at the number who showed up as a result of a few just passing the word along."

A sign-in sheet was circulated and only one item of business was conducted—as the group set the date for another luncheon Dec. 8 at the same location. An even larger group of "Convair alumni" are expected for it.

The idea of the "fair size luncheon" last month evolved from Larry Sweeney, W. M. "Bud" Becker, Hopman and a few others getting together for lunch once a week to talk over old times at Convair.

Growing interest prompted the group to schedule a regular group-size luncheon and to invite other retirees. The resulting turnout looked something like a "who's who" from past years at Convair.

Included were Sam Adams, Walt Bailey, Frank Boggs, Baker, G. O. Couchman, Pete Carlson, D. A. Curtiss, Dale Cromartie, V. W. Dimpel, W. A. Dersham, Bernard Gamson, Eugene Greene, Eddie Generas, Augie Hill, Milt Hangen, Hopman, and Gertrude Hunter.

Also Eric Johnson, George Lynch, Jack Lenin, H. W. "Jimmy" Meyers, Harold B. Mayer, John Mikulsky, Dick Maving Sr., Chuck McCade, Red McLaughlin, Jim McFall, Charles McCullough, Vince Petricola, Don Palumbo, Otto Peterhansel, Herb Rubottom, Sweeney, Len Stabenau, Charles Shoupe, Al Vernon, Bob Watt, Frank Weismantel, Minor Wells, and Charles Wallman.

Other division retirees can make reservations for the Dec. 8 luncheon through the Convair Management Association office or by calling Sweeney, Becker, or Hopman.

General Dynamics is an Equal Opportunity employer.

Company to Pay Insurance Fees

Convair Aerospace-SD employes represented by the United Association of Plumbers and Pipefitters will have the entire premium paid for their dependents medical insurance by the company beginning this Friday (Dec. 4).

Cost to the employe previously has been $2.93 per week. The increase in take-home pay will be reflected in checks received beginning Dec. 18.

Previously receiving the increased benefit of company-paid dependents medical insurance premiums were non-represented employes and those represented by the International Association of Machinists, International Brotherhood of Electrical Workers, Engineers and Architects Association, and International Alliance of Theatrical Stage Employes.

Paul R. Allgire, chief of employe benefits, said eligible hourly employes who do not have but wish to obtain coverage for their dependents may make application on forms available at employe benefits offices.

Dependents to be covered are not required to have a medical examination. Pre-existing illnesses may be covered by the basic policy but not by the major medical plan unless there has been a 90-day treatment-free period.

Engineer Award Forms Sent Out

Nomination forms for Convair Aerospace Division's "Engineer of the Year" for 1970 have been distributed to supervisors in the San Diego operation's research and engineering and launch vehicle programs departments.

Winner of the division award will receive a $500 honorarium and Design Achievement Award certificate and automatically will become a candidate for the Corporate Design Achievement Award consisting of a $1,000 honorarium and certificate.

The annual awards program was instituted last year to honor outstanding engineering ability through selection of the most significant contribution to design during the year.

Nomination forms distributed by R. E. Adams, Convair Aerospace-SD vice president-research and engineering, and K. E. Newton, director-launch vehicle programs, are to be returned to Bill Ochodnicky, coordinator, by Friday (Dec. 4).

Staff members from the two departments will screen nominations from their areas and select several for overall judging.

The division award will be presented in January and the Corporate award in February.

Pedal Pushers Plan Two Rides Next Week

Members of the CRA Bicycle Club have scheduled two rides next week—a 12-mile ride along Mission Bay starting at 2 p.m. Sunday (Dec. 6) and a 25-mile "Lakeside loop" starting at 9 a.m. Saturday (Dec. 12).

The Mission Bay ride will begin at the Hilton Inn with Dick Gilbert, ext. 1267 LF, as ride leader. The Lakeside ride will begin at the waterfall at Robinson's in Fashion Valley with Chuck Pershing, ext. 1408 LF.

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SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 23, No. 23 PUBLISHED BY GENERAL DYNAMICS CORPORATION 7178 Wednesday, December 16, 1970

J. M. Adamson Now Director Of Operations

James M. Adamson, formerly director of manufacturing, has been appointed director of operations for Convair Aerospace Division's San Diego operation by Lyman C. Josephs, vice president and general manager.

J. M. Adamson

W. L. Van Horn, former director of operations program management and control, has been appointed assistant to Josephs (Dept. 100-3) with special emphasis on implementing joint occupancy of the Kearny Mesa plant by Electro Dynamic Division's Electronics operation and Convair Aerospace-SD functions.

Functions formerly reporting to both Adamson and Van Horn now report to Adamson.

Before being appointed director of manufacturing in June, Adamson had served as manager of operations for the Lindbergh Field plant, director of special programs, chief design engineer,

(Continued on Page 2)

TREE TRIMMER—Claudia Huback of Convair Aerospace Division poses for novel Christmas photo. It was shot through pane of glass that had been suitably decorated.

A Christmas Message From David S. Lewis:

My fellow employes:

The Christmas season and the approach of a New Year have always had a special meaning for Americans. It is a time for reflection and for contemplation. It is a time when men of good will everywhere are united by their hopes for peace and a better world.

Our sense of values—as citizens; as individuals in our society; and as members of our industry—is being challenged as never before. However, we should remember that the essence of the Christmas message is one not of despair but of hope and happiness, happiness in the many real pleasures and gifts we often take for granted, but which are denied to millions of our fellow men:

The pleasures of being with our families and friends,
The gift of freedom from hunger and fear,
The joy of living in a nation where a man's worth is judged by achievement, not race or creed.

While I have been associated with our company for only a short time, I have worked with a number of its people for many years. The reputation of these people represents all that is best in General Dynamics—skill, integrity and devotion to excellence.

These qualities will be needed in even greater measure if we are to fulfill our goals as citizens, and as members of tomorrow's society.

In the months to come, I plan to meet with more of you personally. I want to work with you in making General Dynamics an even stronger and better company than it is today.

It is appropriate that we start the New Year with a goal of company progress and individual satisfaction. At the same time, by working together, we can make a start toward achieving the higher ideals of this happy season.

To each of you and all of your families, our sincere wishes for a particularly joyful holiday season.

David S. Lewis
Chairman of the Board and chief executive officer, General Dynamics

Veteran Space Executive Appointed Deputy Shuttle Program Manager

Ivan Rattinger, a veteran Aerospace Corporation executive and group director of its advanced vehicle systems directorate since 1966, has joined Convair Aerospace Division's San Diego operation as deputy program manager for the space shuttle program.

Ivan Rattinger

He reports to Dr. D. A. Dooley, vice president-space programs and space shuttle program manager, and will assist in overall management of the shuttle program.

Rattinger has been with Aerospace Corporation since 1960 as a staff engineer for structures and materials, manager of aeromechanical systems, director of vehicle systems, head of the design analysis department, systems design director, and group director for the advanced vehicle systems directorate in the systems planning division.

Since 1966 he has been responsible for conducting and managing advanced space vehicle systems planning activities—including launch and re-entry vehicle studies now combined to form the basis for space shuttle and space station programs—for support of the Air Force Space and Missile Systems Organization.

His principal activities have included maneuverable spacecraft mission analysis leading to studies on multipurpose reusable spacecraft, minimum-cost design launch vehicles, advanced expendable and partially reusable launch vehicles, space escape and rescue, and space station applications.

Rattinger has served as a member of the Department of Defense space transportation system working group and as a member of the joint DOD-NASA space transportation system working group.

Earlier assignments involved support and technical direction for Advanced Minutemen, Saint, Dyna Soar, and Titan III programs.

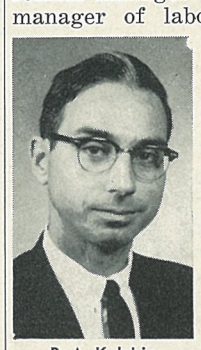
Before joining Aerospace Corporation, Rattinger was associated with Space Technology Laboratories in El Segundo.

He previously had been employed by Bell Aircraft Corp. in Buffalo, N.Y., where he was engaged in structures research, analysis, and test on aircraft and missile programs including the X-2 and RASCAL.

Rattinger holds a master's degree in aeronautical engineering from Polytechnic Institute of Brooklyn and a master's in mechanical engineering from the University of Buffalo.

KULCHIN NAMED TO ELECTRONICS POST

Bernard A. "Bernie" Kulchin, former manager of personnel and manager of labor relations for Convair Aerospace Division's industrial relations department at San Diego, has been appointed director of industrial relations for the Electro Dynamic Division's Electronics operation by W. E. Bratton, vice president and general manager.



B. A. Kulchin

Kulchin is on special assignment with M. V. Wisdom, Convair Aerospace-SD industrial relations director, in Rochester, N.Y.

Kulchin joined Convair in 1957 as a departmental assistant and had assignments as employe serv-

(Continued on Page 2)

VAN EVERY NAMED ADAMS ASSISTANT

Kermit E. Van Every, twice winner of the Society of Automotive Engineers' Wright Brothers Medal for best technical paper of the year in astronautics, has taken a new position with Convair Aerospace Division's San Diego operation as assistant to R. E. Adams, vice president-research and engineering.

L. C. Josephs, Convair Aerospace-SD vice president and general manager, said Van Every will provide technical guidance to Adams on various programs and will devote most of his time during the next several months to the space shuttle program.

Van Every has been with General Dynamics since 1965 and has been serving as director of aerospace engineering and program development at Corporate Headquarters in New York.

Before joining General Dynamics, Van Every was program manager for the X-21 flight test research plan and for M-2 and HL-10 lifting body re-entry vehicles for the Northrop Norair Division.

He previously had been with Douglas Aircraft Co. as chief of technical sections at the Long Beach facility.

Electronics Operation Receives Zero Defects Achievement Award

Electro Dynamic Division's Electronics operation in San Diego (formerly Electronics-SD) has become the first electronics firm in a five-county Southern California area to be awarded the Department of Defense Zero Defects Achievement Award.

ACHIEVEMENT HONOR—Col. C. F. Merz, commander of Defense Contract Administration Services San Diego District, presents Department of Defense Zero Defects Achievement Award to W. F. Bratton, vice president and general manager, for Electro Dynamic Division's electronics operation in San Diego. Others, from left, are R. H. Nicholson, manager of quality control; Hal Goerge, DCAS quality assurance representative at ED-Electronics; D. L. Downs, ZD program administrator for DCAS-Los Angeles Region; and Vern Newhart, ZD coordinator for DCAS-San Diego District.

W. F. Bratton, vice president and general manager, received the award plaque from Col. Charles F. Merz, USAF, commander of the Defense Contract Administration Services' San Diego district, representing Brig. Gen. John S. Chandler, USAF, commander of the DCAS Region-Los Angeles.

It was the second major Zero Defects award to be garnered by the organization. In 1969 it had become the first electronics firm to receive the DOD Zero Defects Participation Award in the area served by the DCAS San Diego district that includes San Diego, Orange, Riverside, San Bernardino, and Imperial counties.

R. H. Nicholson, manager of quality control, said groups within the electronics operation have established quality goals, worked consistently to achieve them, and have established even more stringent goals after they have been met.

"We have consistently reduced defects and maintained high quality even though many of our employes are working on difficult and minute electronic assemblies," he said.

"This reflects outstanding self motivation and personal enthu-

(Continued on Page 2)

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between December 1 and December 15.

Thirty-five-year: Dept. 058, Henry I. Morgan; 250, Elwood R. Find.

Thirty-year: Dept. 002, R. C. Beezley, R. A. Davis; 015, L. Maciel; 031, L. P. Peterson; 046, L. D. Rush; 228, H. L. Dixon, R. E. Townsend; 250, A. A. Burkhart; 401, C. E. Heller; 507, W. A. Norstrom, W. A. Reusch; 761, W. L. McBride; 780, W. B. Barth; 950, L. E. Ottem; 989, B. J. Campbell.

Twenty-five-year: Dept. 015, M. J. Davis; 223, R. G. Graves; 400, R. H. Struck; 780, Gladys E. Millsap; 985, C. D. Wirt.

Twenty-year: Dept. 001, Natalia R. Garcia; 002, R. E. Sweitzer; 015, E. W. Woods; 058, R. J. Moore; 101, Viola D. Burch; 130, P. R. Conkle; 204, F. H. Harding; 222, R. D. Raines Jr.; 228, G. J. Needles; 250, H. N. Cannon, C. F. Courley, F. W. Greel Jr.; 420, G. A. Lowin; 451, G. G. Guthrie; 518, Martha S. Lumsden; 565, J. J. Herring; 584, W. H. Whitley; 589, R. E. Kenyon; 810, L. W. Klingenmeier; 842, Myrtice H. Whitney; 860, J. J. Zathan.

Fifteen-year: Dept. 001, Frances E. Hoy; 015, W. F. Danvers, R. E. Olson, J. B. Poulin; 019, Lavern Drinkard; 027, H. O. Kerkow; 046, G. P. Gerardy; 105, D. W. Chase; 195, J. Gnas; 204, G. Demopoulos; 222, V. M. Garrison; 226, Joy J. Janssen; 250, G. C. Bagwell, G. R. Corelia, G. W. Oliver; 420, C. L. Willey; 517, J. R. Stevens; 553, K. L. Giddings, G. Veiasquez; 575, R. V. Minutello; 591, R. I. Peterson; 595, P. Z. Rider; 597, E. Leinhaupel; 754, J. A. Nagi; 763, G. G. Christ; 810, W. J. Robinson, J. T. Staples; 840, Vivian M. Bishop; 952, E. J. Hujsak.

Ten-year: Dept. 001, F. Poumeie; 053, R. G. Leigh; 101, Wilda F. Leroy, Ophelia F. Lopez, Mary L. Loveall; 130, L. G. Worley; 228, P. L. Smith, L. J. White; 452, T. P. Hartman; 551, E. P. Cormier; 595, W. H. McIntosh Jr.; 780, La Verne M. Rapp; 820, E. A. Bowen; 979, J. H. Blue Sr., K. D. Chapman.

ELECTRO DYNAMIC

Thirty-year: Dept. 711, C. W. McKerlie.

Twenty-year: Dept. 106, C. F. Smith; 423, Mary M. Gimenez; 581, J. H. Cooper; 616, O. L. D. Willoughby.

Fifteen-year: Dept. 102, H. K. Shirley; 105, P. M. Jepson.

Ten-year: Dept. 391, E. Glover; 712, S. R. Hill; 915, M. K. Weiser.

Awards

CONVAIR

Employe Suggestion awards approved for week ending Nov. 25:

J. B. Anderson, Dept. 149-6, $42.50; R. A. Barker, 979-1, $15; N. M. Bone, 840-1, $15; E. T. Clarkson, 143-1, $15; J. K. Clevenger, 400-1, $427.50; W. A. Engelke, 250-3, $15; S. Hall, 002-0, $15; C. W. Johnson, 002-0, $19.30; J. L. Killeaney, 027-0, $15; G. J. Kadlec, 979-2, $15; R. J. Kolek, 144-1, $59.30; T. R. Reid, 250-3, $15; J. H. Samuel, 015-0, $18.60; D. T. Shepard Sr., 002-0, $25; L. G. St. John, 979-4, $15; H. Staten Jr., 733-0, $15; F. G. Steglic, 015-0, $134; F. H. Stine, 027-0, $24.60; A. O. Weinberg, 979-1, $15.

Employe Suggestion awards approved for week ending Dec. 4:

M. Alianelli, Dept. 222-1, $177.70; R. R. Atkinson, 046-0, $144.90; E. C. Austin, 142-1, $15; J. F. Batchelder, 046-0, $40.50; T. A. Bessey, 143-1, $15; R. S. Bernstein, 015-0, $15; W. C. Bowen, 149-8, $15; J. W. Brett, 046-0, $36.10; J. W. Brown, 101-4, $362.90; R. L. Cowan, 002-0, $15; R. E. Culver, 143-1, $15; J. J. Curci Jr., 149-1, $58.70; M. H. Frink, 130-6, $70.60; E. T. Gahlbeck, 046-0, $56.40; B. A. Ganoe, 578-1, $45.90; W. F. Hoover, 027-0, $25; E. C. Jankowski, 002-0, $148.80; J. E. Keaton, 130-8, $15.

Also F. H. Kleckner, 027-0, $274.70; L. V. Malody, 001-0, $36.50; E. V. Marikle Jr., 507-0, $15; A. Morales, 015-0, $16.30; J. S. Morytko, 001-0, $15; I. P. Mouet, 046-0, $15; K. A. Neas, 141-2, $79.30; C. Portugal, 045-0, $87.50; O. W. Potter, 579-2, $30; M. H. Pradels, 046-0, $25; E. J. Rasp, 860-0, $478.70; R. L. Rondeau, 979-3, $15; S. Serrano, 733-0, $82.50; A. Van Norman, 587-0, $15; E. A. Wimp, 046-0, $15; L. M. Young, 228-4, $174.

Papers Presented

CONVAIR

GRIGGS—M., Dept. 596-0. "Application of spectroscopy to remote measurement of air pollution." Society for Applied Spectroscopy, New Orleans, La., Oct. 5-10.

MILLS—A. H., Dept. 541-0. "Instrumentation system for measurement of noise characteristics." IEEE-EMC Regional Symposium, San Antonio, Texas, Oct. 6-8.

NULTON—H. G., Jr., Dept. 145-1. "The space shuttle also needs SAFE." Survival & Flight Equipment Assn. Symposium, Sept. 28-Oct. 1, Las Vegas, Nevada.

OLIVER—G. W., Dept. 250-0. "Economics of contamination control in machine tool hydraulic systems." Fluid Power Society, Chicago, Ill.

Papers presented at the International Astronautical Federation, Constance, Federal German Republic, Oct. 4-10.

BRUSCH — R. G., G. A. HAZELRIGG, AND W. L. SACHS, Dept. 966-0. "Optimal trajectories with delta velocity constraints."

LUDWIG—Dr. C. B., Dept. 596. "The measurement of air pollution from satellites."

TAYLOR—G. E. Jr., Dept. 512. "The crossed H inferometer — a large space structure for orbital astronomy."

WITHEE—W. E., D. J. POWELL, Dept. 501. "The modular orbiting international laboratory."

Papers presented at the AIAA Meeting and Technical Display, Houston, Texas, Oct. 19-22.

KETCHUM—W. J., Dept. 952-5. "Orbit-orbit shuttle toroidal tank outflow & slosh characteristics."

MAC DONALD — J. M., Dept. 501. "Operational aspects of free-flying experiment modules."

NORTH—B. F., Dept. 589-1 and O. T. STOLL, North American Rockwell Corp. "Space shuttle environmental control & life support systems."

Papers presented at SAMPE National Tech. Conference, Dallas, Texas, Oct. 6-8.

MAY—Luke C., Dept. 572. "Evaluation of low temperature curing, long-open-time adhesives."

MERZ—Dr. P. L., Dept. 572. "Deficiencies of current seal rubber for hydrogen peroxide service."

Papers presented at SAE National Aeronautic & Space Engineering and Manufacturing Mtg., Los Angeles, Calif., Oct. 5-9.

PETERS—C. F., W. A. ROBERTS, Dept. 952. "Economic and design considerations in deriving a universal space vehicle completmenting the space shuttle."

WEISINGER — M. D., Dept. 572. "Metal matrix composite structures tooling and fabrication processes."

Rider-Driver

CONVAIR

WANTED: Either rider or driver (or will alternate) from vacinity of Mollison and Broadway, El Cajon, to LF plant, 8 to 5 shift. Al Baber, ext. 522 LF, or home 442-2726.

RIDE WANTED — From Coronado, Fifth and Pomona Ave., to Lindbergh Field plant, 7 a.m.-3:30 p.m. shift. Phone Chuck Fowler, ext. 1067/1987, or (home) 435-0468.

Retirements

CONVAIR

ANDERSON — Alma M., Dept. 840-1. Seniority date Jan. 14, 1957, retired Nov. 30.

BERNHARD — Ewing C., Dept. 130-1. Seniority date May 11, 1951, retired Nov. 14.

BOYLAN—James B., Dept. 953-1. Seniority date Oct. 16, 1956, retired Oct. 30.

DORFF—Edward, Dept. 515-0. Seniority date May 23, 1955, retired Dec. 4.

FRITZ—Oliver H., Dept. 221-1. Seniority date Dec. 27, 1965, retired Nov. 30.

GIMBER—Howard B., Dept. 205-1. Seniority date Dec. 15, 1936, retired Nov. 30.

HANNA—John W., Dept. 533-1. Seniority date Oct. 29, 1936, retired Oct. 30.

HIBERT—Charles L., Dept. 561-0. Seniority date Nov. 4, 1935, retired Dec. 4.

JENKINS—Robert H., Dept. 565-1. Seniority date Aug. 28, 1961, retired Nov. 30.

KEMPFF—Clarence S., Dept. 954-1. Seniority date July 3, 1956, retired Dec. 4.

LANG—Gilbert F., Dept. 954-1. Seniority date June 13, 1956, retired Dec. 4.

MARSHALL—Gerald, Dept. 545-2. Seniority date Dec. 2, 1958, retired Nov. 30.

NELSON—Ralph E., Dept. 170-1. Seniority date Sept. 26, 1949, retired Nov. 30.

O'CONNOR—Frank J., Dept. 228-6. Seniority date May 15, 1934, retired Nov. 25.

O'HARE—George W., Dept. 511-6. Seniority date Oct. 18, 1937, retired Nov. 13.

PARKER — Virginia L., Dept. 515-0. Seniority date July 11, 1955, retired Nov. 30.

PEARCE—David A., Dept. 400-4. Seniority date Oct. 30, 1946, retired Nov. 30.

RATAJKOWSKI—Joseph T., Dept. 144-1. Seniority date March 3, 1957, retired Nov. 30.

SILKWOOD—Lillian C., Dept. 402-0. Seniority date March 17, 1959, retired Nov. 27.

TRESSLER—Charles T., Dept. 400-5. Seniority date April 30, 1952, retired Nov. 30.

WALKER—Edie M., Dept. 144-2. Seniority date April 9, 1957, retired Nov. 30.

WOOD—Sedgwick T., Dept. 569-0. Seniority date Oct. 23, 1940, retired Nov. 30.

Personals

CONVAIR

My heartfelt appreciation is extended to all who participated and wished me well at my recent retirement from Convair.

Frank J. O'Connor

* * *

We would like to express our heartfelt thanks to our many friends for their sympathy and overwhelming contributions in memory of our loved one who recently passed away.

Ray Forrest and family
Dept. 985

* * *

I wish to thank all my fellow employes at AF Plant 19 for their cooperation in the drive for signatures for protest letters to Hanoi regarding prisoners of war living conditions.

L. M. "Tim" Timlick, Dept. 250

Births

CONVAIR

HILD—Daughter, Dawn Marie, 8 lbs. 9 oz., born Nov. 27 to Robert F. (Dept. 141-2) and Joan Hild.

Deaths

CONVAIR

KING—Roy E., Dept. 250-0, died Nov. 20; survivors include his wife, Opal; a son, Kenneth; and a daughter, Mrs. Wynona Chestine.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

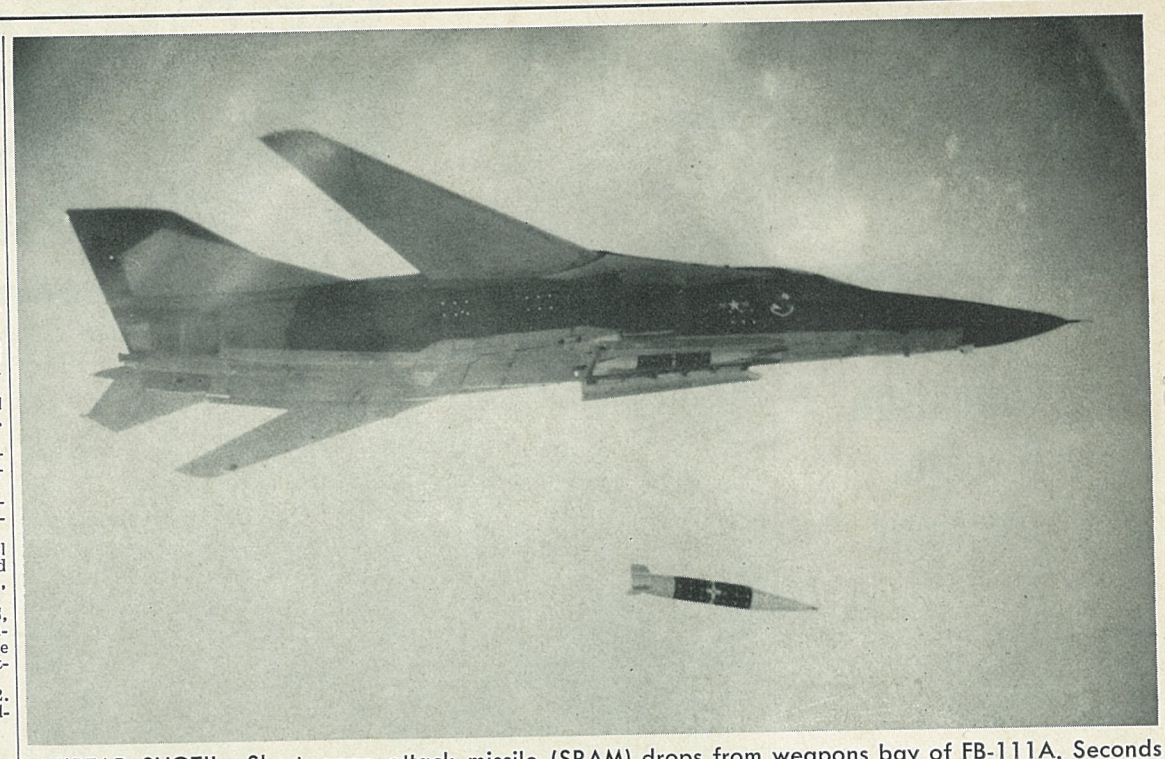
Convair Aerospace editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P. O. Box 1950, San Diego 92112.

Cafeterias Schedule Xmas Fare and Decor

Special Christmas luncheon menus and decor have been scheduled next Tuesday (Dec. 22) by Prophet Foods Co. at the Kearny Mesa and Lindbergh Field cafeterias.

Served will be garnished pot roast of beef, whipped potatoes, mixed vegetables or beets, roll and butter, cake, and a beverage. Cost will be $1.10 with milk five cents extra.



"REAR SHOT"—Short-range attack missile (SRAM) drops from weapons bay of FB-111A. Seconds later, missile ignited, reversed course and hit harget behind the aircraft.

$10½ Million Follow-on Contract Awarded For Centaur Through 1971

Convair Aerospace-SD has been awarded a $10½ million NASA follow-on contract for Centaur program management and engineering support services through Nov. 30, 1971. Options also are included for up to $1.3 million in additional funding for optional manhours for engineering and management services and computer time.

Ron Stoneburner, contract administrator, said the basic contract covers 462,000 engineering manhours, 2,515 computer hours, and related facilities and materials for design and development engineering of the Centaur D and limited support of the Centaur D-1 program.

Options which may be authorized later would include up to an additional 60,000 engineering manhours and up to 400 additional hours of computer time.

Engineering covered by the contract will support Orbiting Astronomical Observatory-C (Atlas-Centaur 22), INTELSAT (Atlas-Centaur 25 and 26), and Mariner-Mars (Atlas-Centaur 23 and 24) missions.

The contract also covers design and analysis effort required to update and incorporate non-mission-peculiar improvements in the present Atlas - Centaur; support for NASA-Lewis on test configuration, programs, and data analysis for the Centaur B-2 test tank; and ground and airborne systems design data and analysis effort required to integrate the Centaur with the Titan booster.

Stoneburner said detailed direction on work to be performed within the scope of the contract will be defined by separate NASA technical directions. The division has responded to more than 700 such technical directions under similar contracts during the past four years.

Personnel assisting with contract negotiations included Fred Major, Centaur program office; Stoneburner, contracts; and S. J. McMillan, estimating.

KULCHIN NAMED TO ELECTRONICS POST

(Continued from Page 1)

ices representative and industrial relations analyst the following two years at the Air Force Missile Test Center (now Eastern Test Range).

He was chief of base industrial relations for the former Astronautics Division from 1960 to 1962 at Schilling AFB, Kan., and Plattsburg AFB, N.Y., before returning to San Diego.

In 1963 he became responsible for coordination all labor relations and wage and salary policies for off-site missile bases.

In 1963 he was responsible for coordinating all labor relations and wage and salary policies for off-site missile bases.

Kulchin returned to the Eastern Test Range as chief of base industrial relations in 1965 and was appointed chief of labor relations for Convair Division in 1968 and was named manager of personnel in April, 1970.

Kulchin holds AA and BA degrees from the University of Florida and a bachelor's degree in education from the University of Miami.

Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, Jan. 9. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. Also not permitted are canvas or open-toed shoes and bare feet.

Electronics Earns Coveted ZD Award

(Continued from Page 1)

siasm toward defect-free work," he added. "We recently delivered a complex F-111 aerospace ground equipment requirements data (AGERD) test set to Convair Aerospace Division's Fort Worth operation without a single test defect."

Nicholson expressed appreciation to DCAS personnel for their assistance and interest in the organization's Zero Defects program. The program includes recognition for supplier firms for providing defect-free products as well as for outstanding work by the operation's own groups and individual employes.

Nicholson said the DOD Zero Defects Achievement Award was for outstanding performance during a six-month period during which all goals were met and progress toward the goals was documented.

Adamson Appointed Operations Director

(Continued from Page 1)

and director of design development.

He previously had been program manager for the C-141 empennage subcontract program and assistant project engineer on the F-102 and F-106 programs.

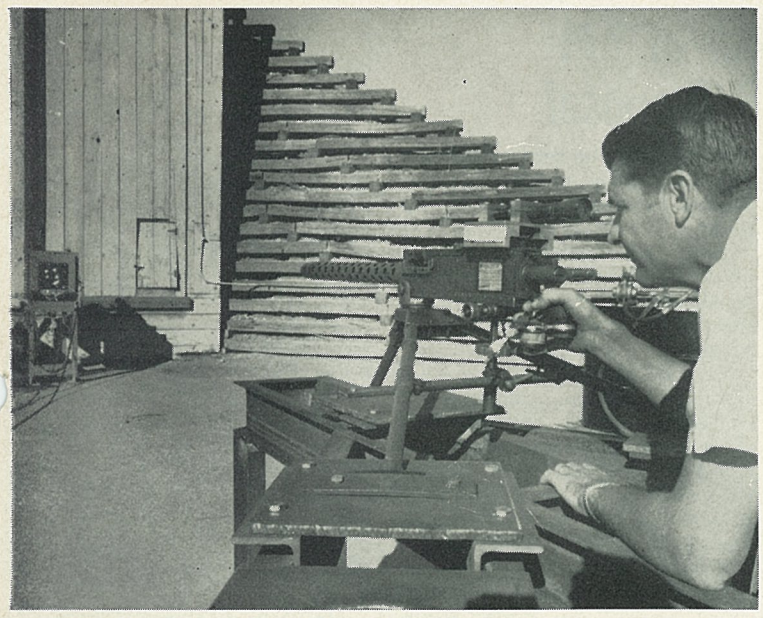
Adamson joined the division as a stress analyst in 1943 and later had engineering assignments on the B-24 bomber, XC-99 cargo transport, XB-46 jet bomber, "Convaircar" flying auto, R3Y flying boat, and XFY-1 turboprop VTOL interceptor.

He holds a mechanical engineering degree from the University of Utah and is a registered professional mechanical engineer.

Van Horn joined Convair in master scheduling in 1950 and, after service at Fort Worth, joined the former Astronautics Division, becoming vice president and program director for the Atlas weapons system in 1962 and works manager in 1964.

He was appointed manager of Convair Division's Lindbergh Field operations in 1966, director of operations in 1967, and director of operations program management and control in June.

BANNER LEADERS—Convair Aerospace Division men who helped San Diego AIAA section become best in nation last year were, from left, Bill Chana, chairman; Tom Leech, secretary; John Wild, technical activities chairman; Fred Porter, publications chairman; and Jim Mason, programs chairman. Jim Robinson, long-range planning chairman, was not present for photo. Banner was presented at AIAA annual meeting in Houston.



ZEROING IN — Jim McGoodwin, Dept. 64-2, calibrates .30 caliber machine gun, used to fire bullet into simulated fuel tank in Survivability/Vulnerability studies.

Simulated Fuel Tanks 'Machine Gun' Target

What happens inside an aircraft fuel tank when it's penetrated by a bullet?

Test engineers in the Fluid Dynamics Laboratory at Fort Worth are seeking the answer by firing .30 and .50 caliber machine gun shells into a simulated fuel tank.

Purpose: to check the fuel tank's vulnerability to small-arms fire and the aircraft's chances for surviving under such circumstances.

In the tests, bullets were remotely fired from both .30 and .50 caliber machine guns. The projectile passed through a "timing device" which measured the bullet's velocity, then through an aluminum plate and into the tank, partially filled first with water, then JP-4 fuel.

High-speed motion pictures recorded the bullet's path, with the entire event being monitored from a trailer near the gun-butt range area.

Level of fluid was varied to observe the effects of the bullet on different volumes in the simulated tanks.

"The tank was pressured to determine the static pressure necessary to deflect the weakest part of the test tank," said W. L. Nix, Dept. 64-6 test engineer.

Nix said the tests tie in with similar experiments being carried out by the Survivability Group of the Air Force Flight Dynamics Laboratory.

"The effort," he said, "is part of an industry-service effort to improve survivability of air vehicles. We visited the Flight Dynamics and Materials Laboratories to discuss what we can do, and we have verified that our program will fill existing gaps in the available test data."

People Mobility

Personnel Transfers Within GD

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

STERLING V. STARR (1960) from Convair Aerospace-SD to Corporate Headquarters, New York; **WILLIAM DINGSDALE** (1959) from Electro Dynamic-Roch. to ED-SD as engineering manager; **MICHAEL PENTA** (1964) from ED-Roch. to ED-SD as planning control supervisor; **JOHN H. BRITTEN** (1968) from ED-Roch. to senior engineer, ED-SD; **RONALD JAGODINSKI** (1969) from Convair-SD to ED-SD as financial analyst; **JERRY W. DONOVAN** (1967) from ED-Roch. to senior engineer, ED-SD; **WILLIAM F. LUSTER** (1966) from ED-Roch. to ED-SD as principal engineer; **RICHARD F. STYVAERT** (1970) from Convair-SD to ED-SD as financial analyst; **MICHAEL B. HOSKING** (1962) from ED-Roch. to engineering manager, ED-SD; **RAYMOND G. JOHNSON** (1969) from Convair-SD to ED-SD as financial analyst; **JON E. KLEINHAUS** (1966) from ED-Roch. to engineer, ED-SD; **FINN NIELSEN** (1966) from ED-Roch. to senior engineer, ED-SD; **DONALD E. JONES** (1969) from ED-Roch. to estimating budgets analysis manager, ED-SD; **RONALD W. MOLL** (1956) from Convair-SD to manufacturing analyst, ED-SD; **STEPHEN M. TUNSTILL** (1968) from ED-Roch. to ED-SD as engineer; **JEROME V. HOLLORAN** (1969) from ED-Roch. to ED-SD as marketing manager; **GERARD R. LA ROSE** (1967) from Convair-SD to configuration control specialist, ED-SD; **MARY A. ADAM** (1959) from Convair-SD to engineer, ED-SD; **THOMAS P. YOUNG** (1956) from Convair-SD to ED-SD as design specialist; **DARYL W. ALSOP** (1967) from Convair-SD to ED-SD as engineer; **EDWARD L. WOLFENSBERGER** (1958) from Convair-SD to senior engineer, ED-SD; **THOMAS J. KELLY** (1964) from ED-Roch. to ED-SD as director of international marketing; **DAVID K. BEAN** (1966) from ED-Roch. to senior engineer, ED-SD.

WALTER K. WHITE (1961) from Convair-SD to senior engineer, ED-SD; **FRANCIS W. ARFORD** (1958) from Convair-SD to ED-SD as senior engineer; **WARREN S. WILLIAMSON** (1951) from Convair-SD to ED-SD as principal engineer; **RALPH G. BARNHILL** (1962) from Convair-SD to senior engineer, ED-SD; **GERALD L. PRIOR** (1966) from ED-Roch. to senior design assurance engineer, ED-SD; **ROBERT H. ABBOTT** (1967) from ED-Roch. to ED-SD as field engineer; **GARY W. BARTLOW** (1967) from Convair-SD to ED-SD as engineer; **PETER H. WILLIAMSON** (1966) from Convair-SD to senior engineer, ED-SD; **WILLIAM R. BEVERLY** (1955) from Convair-SD to ED-SD as senior engineer; **WARREN W. WEBB** (1967) from Convair-SD to senior engineer, ED-SD; **FRANK DAGONESE** (1966) from ED-Roch. to quality control engineer, ED-SD; **GEORGE B. RISHER JR.** (1964) from ED-Roch. to planning control specialist, ED-SD; **PAUL E. BURKE** (1963) from Convair-SD to ED-SD as senior engineer; **HUBERT C. WATTON** (1956) from Convair-SD to senior engineer, ED-SD; **THOMAS W. MUNDAY** (1963) from ED-Roch. to principal engineer, ED-SD; **CONSTAS P. LECOURIS** (1959) from ED-Roch. to senior engineer, ED-SD; **RUSSELL H. CICOTTE** (1967) from Convair-SD to ED-SD as engineer.

Survivability/Vulnerability Rating Judged 'Quite High' For FB-111A

A decade or so ago, the B-70 was being groomed as the nation's next long-range bomber. The mammoth Mach 3 aircraft was designed to penetrate at high altitude—well beyond the reach of the enemy missiles—drop its payload, and return home.

About this time, however, the Soviets developed a surface-to-air missile which was highly effective against high-altitude penetrators. The B-70 thus became highly vulnerable to enemy defenses, and the program eventually died.

As the result of this and a number of similar experiences, the Air Force is now making an intense effort to anticipate future enemy threats and to insure that new aircraft are designed to survive against them.

Accordingly, operations research personnel at Fort Worth operation have carried out extensive survivability/vulnerability (S/V) programs on the F-111, F-15, and B-1. Working directly with the various design groups, they have developed a system of computerized mathematical models for evaluating the vulnerability and survivability of aircraft designs.

Dr. T. L. Guzzle, project operations analyst who coordinated the S/V work on B-1, said: "Our interfaces with designers have improved continuously during the past few years of work on the F-111. We made our best overall effort to date in the S/V area on the recent B-1 effort. Still, a great deal of improvement in the area of integrating our S/V analysis into the design process will be needed on future programs."

"What we're doing basically," said Gordon Bowen, senior operations analyst responsible for the current S/V model development, "is to equate an aircraft's mission with the threats it will face.

"A bomber, for example, is designed primarily to carry out strategic missions. This means that it must be designed to withstand the effects of nuclear weapons."

On this point, Bowen said, the FB-111A's S/V rating is quite high. "The FB-111A's survivability is enhanced by its penetration profile as well as its low vulnerability. It is the only operational bomber capable of carrying out a nuclear mission on the deck at supersonic speed. Thanks to its unique terrain-following radar, it is highly survivable against enemy missiles. Its chances of carrying out a strategic mission are better than any other bomber's."

The S/V problems of fighters are different. Tactical aircraft are used mainly in limited war, so the S/V emphasis in the design process must be on minimizing vulnerability to conventional weapons.

"This has proven especially true in Southeast Asia," said Dr. Guzzle, "where aircraft have been lost to small arms, anti-aircraft fire, and conventional missiles. This is why S/V analysis is playing such an important role in the design of current fighters like the A-X, on which Convair Aerospace-SD is competing."

"In designing for minimum vulnerability to conventional weapons," Dr. Guzzle said, "the fuel system is given first consideration, since it contributes most of the aircraft's vulnerability to non-nuclear weapons."

Bowen added: "The possibility of fuel explosions can be greatly reduced by using polyurethane foam—a sponge-like material—or inert gas inside the fuel tanks. Foam in cavities outside tanks and self-sealing bladder linings inside the tanks also reduce the chances of fire."

Another survivability "plus" on any type aircraft is to have a number of back-up systems, properly placed.

"Placement is important," Bowen said. "For example, if a plane has three hydraulic systems, but the systems are so arranged that a single shell can damage all of them, its vulnerability is no lower than if it had only one system."

Other important considerations in the conventional S/V area relate to flight controls, avionics, crew protection, and structural invulnerability.

S/V analysis is, of course, only one factor the design engineer must consider. S/V criteria may be compromised in the actual design to accommodate other major tradeoffs, such as performance, reliability, and maintainability.

Operations research is currently bidding on a conventional S/V study for the Air Force Flight Dynamics Lab at Wright Patterson AFB, Dayton.

FIRST-HAND—Frequent inspection of aircraft components and systems is vital part of aircraft Survivability/Vulnerability studies made by Dr. T. L. Guzzle, left, project operations analyst, and Gordon Bowen, senior operations analyst.

Trials, Tribulations Of XB-36 Recalled

An article in the winter 1970 edition of the American Aviation Historical Society's Journal, dealing in detail with development of the XB-36 by Convair, includes this anecdote:

"The project engineer" (the late Henry Growald of Fort Worth) "was so anxious to see delivery of the propellers that he asked Curtiss to consign them to him personally, assuming that they would come to Convair and thus be called immediately to his attention. But, in the middle of one night, the propellers, each requiring four crates of various components, were unloaded in front of his house."

Senator Stennis Approves F-111, Says It's 'Over Hump'

Senator John C. Stennis of Mississippi visited Cannon Air Force Base, New Mexico, recently for a 70-minute briefing, a base tour and inspection of an F-111.

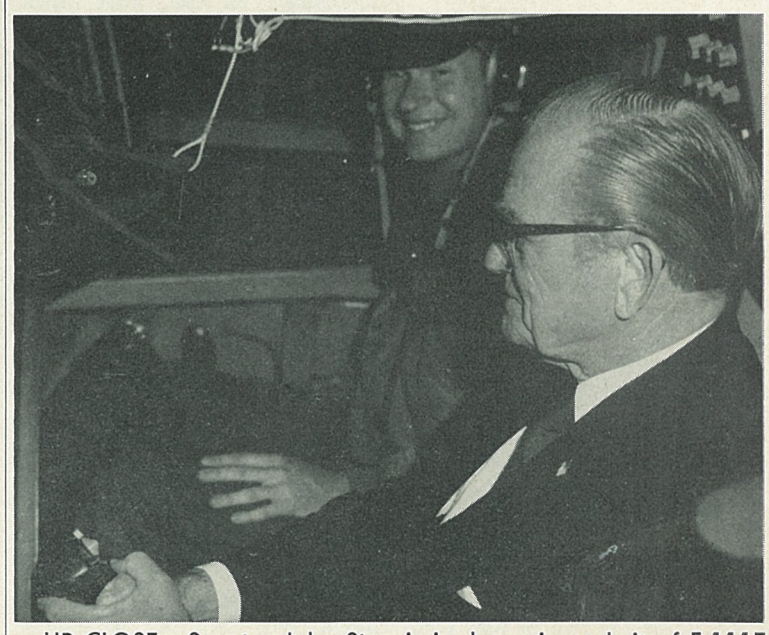
The Clovis, N.M. News Journal quoted the senator as saying that the role of Cannon AFB in the nation's military preparedness program is considerably boosted by assignment of F-111s.

"It seems to me it (the F-111) is over the hump. It looks as though tests have been successful and that puts Cannon AFB right up front with one of the foremost weapons the Air Force has," the News Journal quoted.

The senator stated that all military programs are under review, but added, "I see no re-evaluation that would leave the F-111 out," the News Journal reported.

The F-111 inspected by the senator was an E model assigned to the 27th Tactical Fighter Wing.

Thus far, 15 F-111s have been returned to Cannon AFB following proof testing.



UP CLOSE—Senator John Stennis is shown in cockpit of F-111E at Cannon AFB, N.M., along with Capt. James G. Selander, F-111 pilot.

ITALIAN VISITORS—Pictured on tour of DC-10 production area at Convair Aerospace-SD, LF plant, foreground from left, J. M. Adamson, Convair director of operations, Dott. Ing. Oscar Cinquegrani, chief executive officer, Aeritalia (Aerfer) and Sig. Piero Manetti, U.S. liaison representative, Aeritalia. Background from left, J. B. Hurt, H. E. Moose, W. C. Buxton, of Convair Aerospace; and Gen. Adolfo Varini, commercial director, Aeritalia.

Top Aeritalia Executives Tour DC-10 Operations at San Diego

Early this month Aeritalia (formerly called Aerfer) executives were in San Diego for contractual negotiations for the upper fuselage panels of the DC-10 produced by the Italian firm for Convair Aerospace-SD.

Visitors included Dott. Ing. (Dr. of engineering) Oscar Cinquegrani, chief executive officer; Gen. Adolfo Varini, commercial director; and Sig. Piero Manetti, U.S. liaison representative assigned to the McDonnell Douglas plant in Long Beach.

During their three-day visit they toured the DC-10 production areas at both Lindbergh Field and the Kearny Mesa facilities.

Convair Aerospace officials hosting the visit included Frank W. Davis, president; J. B. Hurt, DC-10 program manager; J. M. Adamson, director of operations; H. E. Moose, director of material; and W. C. Buxton, purchasing agent.

Potential Orbital Experiments Outlined in 'Blue Book' Session

Candidate earth orbital manned space flight experiments for the next decade to be included in the updated NASA "Blue Book" were described by six Convair Aerospace-SD men in a final report meeting Dec. 2 and 3 at Marshall Space Flight Center in Huntsville, Ala.

Convair Aerospace-SD scientists and engineers under the direction of Dr. Kenneth A. Stone, project leader, have been working on the "Blue Book" update since July under a $200,000 NASA contract.

The division will print and distribute 500 eight-volume sets of the comprehensive report, officially titled "Reference Earth Orbital Research and Applications Investigations," under the contract. Publication is scheduled by Jan. 15.

Many NASA scientific personnel have provided input and assisted in preparation of material for the new update volumes.

More than 150 scientists and engineers from NASA, the military services, and industrial organizations attended the report meeting in Huntsville to review and discuss changes for the update. Three French representatives of the European Space Research Organization also attended.

Participating in the four-hour oral presentation of results of the Convair Aerospace-SD "Blue Book" studies, in addition to Stone, and experiment areas covered were Dr. W. H. Steurer, space manufacturing; Doug King, life sciences; Jim Peterson, advanced technology; Ed Saari, astronomy; and Ruben Onstad, communications and navigation.

NASA will use the "Blue Book" as the primary source of experiment program data for use in the continuing space station studies, space shuttle studies, research and applications module studies, and other manned space flight planning activities.

NASA - Marshall has directed the work being done by Convair Aerospace on the "Blue Book" updating and has had scientists and engineers serving on teams for review of major experiment fields.

The first "Blue Book" was published in 1969 under an experiment module study contract and was updated by NASA in June.

Electro Dynamic Dance Draws 500

Over 500 Electro Dynamic-SD employes and their spouses attended the holiday dinner-dance held at Town & Country Hotel, Dec. 5.

M. E. Kriedeman, chairman, described the gala affair as a "spectacular success." The festive mood was set early in the evening beginning with a cocktail hour followed by a char broiled top sirloin steak dinner.

Ken Walker, Dept. 106, was grand prize winner of the raffle winning a round-trip for two to Las Vegas via Western Airlines with accommodations for two nights and three days at the Dunes Hotel.

Other door prize winners included R. D. Herring, Dept. 427, Hertz Rent a Car weekend trip; Terry Vasques (wife of Al, Dept. 614), weekend for two at the Royal Inns of America in San Francisco; Ed Dodero, Dept. 713, Ron Kolek, Dept. 922, round trip for two to Oakland via Air California with lodging at Handlery Hotel; Mary Gimenez, Dept. 423, PSA flight for two to San Francisco with lodging at the San Franciscan Hotel. A total of 43 door prizes in all were awarded.

BENEFITS OFFICE AT LF RELOCATED

Convair Aerospace-SD employe benefits office at the Lindbergh Field plant has been temporarily relocated to Bldg. 2, near the identification office. Telephone extensions 430 and 1645 LF remain the same.

Publishing Schedule Slipped, Next Is Jan. 6

In view of the Christmas and year - end - holidays, GD/NEWS again will slip its publishing schedule one week and will appear next on Jan. 6.

Four-Firm RAM Team at KM Completing Phase-B Proposal

Personnel from Convair Aerospace-SD and three subcontractor firms are working against time to complete and put finishing touches on a proposal for a Research and Applications Module (RAM) 12-month Phase-B design study.

The proposal must be completed and delivered to NASA's Marshall Space Flight Center by Jan. 8. The Phase-B study will be a follow-on to the Phase-A Experiment Module study previously conducted by Convair Aerospace-SD.

Wally Withee, experiment module program director, said winner of the Phase-B study will reevaluate concepts from three previous experiment module and space station studies, then develop a single concept and carry it through preliminary design for use in conjunction with space shuttle and space station.

The Phase-B proposal is being limited by NASA to 200 pages for technical and 70 for management and business presentations.

About 25 representatives from the three Convair Aerospace-SD subcontractor firms for the study have been working on the proposal with division personnel for several weeks in the RAM program area on the second floor of Bldg. 26 at the Kearny Mesa plant.

Included are personnel from Bendix under R. A. Barsocchi, from TRW under Don Waltz, and from North American Rockwell under F. A. Zylius. Each of the in-plant subcontractor groups are being backed up by considerable support effort from personnel at their home facilities.

Withee said responsibilities of each of the firms represented on the team have been closely defined for effective organization and management. Plans are being made for foreign firms to join the team.

For purposes of the preliminary design study, the first RAM launch will be planned for 1978 and will be part of a modular space station which will have an orbital lifetime of 10 years or, alternatively, would operate in a space shuttle sortie mode.

Maximum size of the RAM will depend on the shuttle's cargo capacity but could be 14 feet in diameter and up to 58 feet long with a weight of up to 20,000 pounds.

Current NASA plans are to operate the RAMs either attached to the shuttle or space station or as free-flying units. Free-flying modules could be returned to earth by the shuttle or to the space station for servicing and maintenance.

Free-flying modules would be ideal for experiments extremely sensitive to vibration, contamination, or precision pointing accuracy.

The RAMs, while using many common features, would be specifically adapted for investigations in fields such as astronomy, space physics, bioscience, biomedicine, earth surveys, materials sciences and processing, communications and navigation, and advanced technology.

Scientific specialists aboard a space shuttle or space station could be used for observation; interpretation; adjustment, service, or repair of equipment; and changing procedures or apparatus.

NASA expects the flexible RAM concepts to encourage broad use by community, government agency, university, industry, and commercial organizations. Foreign participation is to be encouraged in all phases of the program.

User organizations will be able to conceive, outfit, and man their own specialized laboratories. Officials of European space organizations have expressed interest in the concept and are following developments in the program closely.

Xmas Decorations Fire Rules Recalled

Del Dimmitt, Convair Aerospace-SD chief of safety and fire, this week called attention to requirements for Christmas trees and decorations that may be brought into the plants.

Only noncombustible decorating material may be used and tree lighting sets and related electrical equipment is prohibited.

Dimmitt said plastic and metalized plastic trees can burn and only those of limited height that are clearly marked as made of slow-burning material should be used.

"Natural trees should be fresh looking with firm needles, no bigger than needed, and must be flameproofed with a verification tag attached," he said.

"The trunks of such trees should be sawed off at an angle above the original cut, supported firmly in sand that is kept wet, and kept well away from possible fire ignition sources."

Dimmitt said self-applied chemical coatings or solutions for "flameproofing" are not completely effective and are unacceptable.

All trees are to be removed to trash bins outside buildings for disposal on the last day prior to Christmas holidays (Dec. 23).

"Christmas is a time for happiness—and no time to be heedless of fire dangers," Dimmitt said. "Let's all have a Merry Christmas by keeping it totally fire-safe."

Military Retirees Combined Insurance Can Raise Benefits

General Dynamics employes in San Diego who are retired military personnel may have up to 100 per cent of medical care costs for themselves and their dependents paid by combining company group insurance benefits with those of the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS).

Proof of eligibility for CHAMPUS benefits is through the retiree's gray Armed Forces identification card (DD Form 2).

Ron Bippert of Convair Aerospace-SD employe benefits said eligible employes and dependents should indicate they have both coverages when filing Aetna claim forms for the company plan or when admitted to a hospital for inpatient care.

Both inpatient and outpatient CHAMPUS claim forms are available through employe benefits offices. Fiscal agents for the CHAMPUS program are Blue Cross for inpatient care and California Physicians Service (Blue Shield) for outpatient care.

Bippert said many retired military personnel who are with General Dynamics may benefit from the multiple coverage but have been unaware of the benefits available through CHAMPUS.

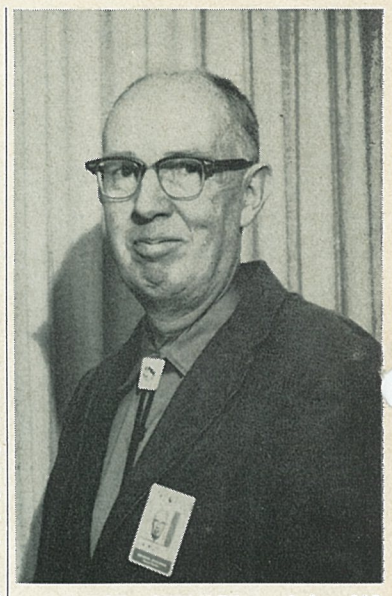
One Week Remains For Toy Donations

The reflection pool at Convair Aerospace - SD's Kearny Mesa plant again this year is being used as a collection point to help make Christmas a happy occasion for underprivileged girls and boys.

Last year employees placed more than 200 toys of varied colors and shapes in the pool under the spiral ramp in Bldg. 2.

M. J. "Chili" Chilcote, plant security guard who heads up the collection effort, said the donated toys will be removed Dec. 23 and distributed by the San Diego Police Department in its Christmas program for needy families.

Coins tossed into the reflection pool during the year also will be retrieved and used by the police for food and clothing purchases for the needy.



SENIOR SERVICE — John W. Wiley, a missile assembler-electrical in Convair Aerospace Division's Dept. 761-0 at Kearny Mesa, recently received 35-year service pin. Since joining company in 1935 at Lindbergh Field, he has had assignments in several areas, including experimental and service engineering.

Telemetry Data Of AC-21 Studied

Both NASA and Convair Aerospace-SD has formed teams to study telemetry data from the Atlas-Centaur 21 mission Nov. 30 in an attempt to pinpoint cause of an apparent malfunction in the Centaur nose fairing jettisoning system.

Launch vehicle programs officials said the Centaur vehicle attempted to compensate for the resulting condition but was unable to reach orbital velocity before its fuel was depleted and the Orbiting Astronomical Observatory-B spacecraft separated. The OAO-B had contained the largest space telescope ever to be launched.

H. W. Plohr of NASA's Lewis Research Center is chairman of the NASA AC-21 failure review board. Members are from NASA's Lewis, Langley, Kennedy, and Goddard centers and observers are from NASA headquarters, COMSAT, and NASA-Lewis.

Deane Davis, assistant director-launch vehicle programs, is chairman of the Convair Aerospace flight review team.

Other members are Karl Kachigan, chief investigator; B. R. Foushee, Centaur program manager; Dan Sarokon, ETR representative; B. B. Shaffer, reliability representative; F. B. Anthony, principal investigator-analysis; J. A. Hughes, principal investigator-electrical; J. T. Heffron, principal investigator-structures; and A. L. Vinzant, principal investigator-propulsion.

Although the AC-21 Centaur vehicle failed to accomplish its flight objective, the Atlas booster for the mission became the 50th consecutive Atlas SLV to perform successfully.

Workshop Scheduled To Start Jan. 5

A "presentation workshop" has been scheduled by Convair Management Association with sessions to be held from 5 to 7 p.m. Jan. 5, 7, and 12 in the Bldg. 2 presentation room at Kearny Mesa.

Harvey E. Seibert, past educational vice president of Convair Toastmasters Club 3745, will be instructor. The course will cover various aspects of preparation and oral delivery of an effective presentation. Cost will be $2 for Management Association members and $3 for others.

Launch Vehicle Folk Will Dance Dec. 18

More than 500 launch vehicle programs personnel from Convair Aerospace-SD and guests will attend a Christmas dinner-dance Friday (Dec. 18) in the Town and Country convention center.

A social hour is scheduled at 7 p.m., roast beef dinner will be served at 8 p.m., and dancing will be to the music of the Crit Connie band.

SOFTBALL CHAMPS—GD/E Bombers, center photo, won Tuesday League softball crown. Shown at awards dinner, from left, are (back row) Tom Munson, Tom Reid, Bob Sileneck, Lance McCay; (front row) Les O'Neal, Pete Goetz, Bob Eliyas, and John Evans. AF Plant 19 All Stars, left photo, chose to receive CRA jackets rather than trophies after they won Wednesday League championship and were runners-up in overall championships to DatagraphiX Reds. Pictured from left are (back row) Pete DeCorse, Bob Fuller, Bob Wood, Bill Shattuck, Charles Sanford; (front row) Fred Todd, Harry Van Buren, Bill Mills, Mike Osborne, and Ray Lucero. Hitless Wonders, right photo, won post-season tournament. Shown from left are (back row) Ron Eckberg, Ray Simpson, Russ Cicotte, Howie Roth; (front row) Pete Mihelich, Pete Williamson, Terry Dougherty, Mike Forys, Steve Esterline, and Chuck Davis.

Lots of Fireworks

'Diving for Cover' Commonplace In Saigon, Says Returning Secy.

Ramona Joyce is glad to be back as a secretary at Convair Aerospace-SD after 19 months of diving for cover at the sound of rocket attacks and spending evening hours watching war being waged in the distance from the roof or her Saigon apartment.

Ramona, a former secretary in Convair's reliability control Dept. 143-0 and now with the Centaur program office in Dept. 950-1, spent the 19 months working for a civilian contractor establishing a Vietnamese veterans' affairs program at the 7th Army's "Pentagon-East" at Tan Son Nhut Air Base.

She shared an apartment with her brother, Jose Sanchez, a former Convair computer operator working for the same firm, and said she met "quite a few" former Convair people in the Vietnamese capital. Two, Dean Hartley and Pete Duffy, also worked for the same firm.

Miss Joyce frequently dove under a bed though she "doubts what good it would do" when rockets fell near her apartment on "rocket alley" two blocks from the South Vietnamese palace.

The apartment was located over a South Vietnamese Self Defense Force headquarters and had plastic windows as a precaution against grenades and similar explosives.

Military buses with armed guards were her main source of transportation, although she saw a lot of the city riding behind her brother on his Honda and in native taxis.

Because of her slight build and Spanish ancestry, Miss Joyce had to use her passport frequently—and often was mistaken as a Vietnamese by the natives.

"Sometimes it paid off," she recalls. "Usually if I gave taxi drivers only my destination they would not realize I was an American and would charge me the lower Vietnamese rate."

Work was the order of the day, however, and Miss Joyce usually worked nine hours Mondays through Saturdays and eight hours on Sundays.

Recreation, for the most part, was limited to activities on the air base—although she did get weekend "rest and recreation" trips to Bangkok, Hong Kong, and Tokyo during her stay. She found the Thais to be especially friendly to Americans and Hong Kong and Tokyo to be "a lot like big cities everywhere."

Her main motivation in going to Saigon, aside from the fact her brother was there, was to save some funds toward retirement—and that, she modestly admits, was achieved.

"There was a big fire when an ammunition dump was attacked my first night there—and I was just about ready to come back right then," she said. "But you soon adjust to the situation. One of the things I developed there was a real appreciation for the freedom and the standard of living we have here in the U.S."

Miss Joyce "kept up" with things at Convair while she was away through copies of GD/NEWS and correspondence with friends. "I have a lot of friends here—and it really is good to be back," she said.

SAIGON SENORITA—Ramona Joyce, a secretary in Convair Aerospace-SD's Dept. 950-1, models one of her ao dai costumes after returning from 1½ years in Saigon. Because of her Spanish ancestry, she often was mistaken for a Vietnamese by the natives.

Getline Commodore For Sailing Club

Gordon Getline was named commodore in a recent election of officers of the CRA Sailing Club. Other officers include Ward Waddell, vice commodore; Tom Courington, secretary; Eric Makela, treasurer; and Charlie McLean, Ev Price, Ed Yeaton, directors-at-large.

The club took top honors in three of four classes in the November Regatta in competition with the Torrey Pines Sailing Club.

CRA sailors placing first included Waddell (Fleet B), Will Sachs (Fleet C), and Louis Nigro and sons (Fleet D). Runners-up were Richard Huntington (A), Norman and Dickie Reed (B), John Oostyen (C), and Graham Campbell (D).

John Tsirimokos, club commissioner, announced that no club activities are planned during December.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 KM. Deadline for next issue of GD/NEWS is Dec. 29. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

ADVENTURERS—Meeting 7:30 p.m., tonight, Dec. 16.

BADMINTON—Play 7-10 p.m., Mondays, Federal Bldg., Balboa Park.

BICYCLE CLUB—Call Bob Williams, ext. 1148 LF for information.

BRIDE—Duplicate bridge sessions, 7:30 p.m., each Friday.

CAMERA CLUB—Meet 7:30 p.m., Dec. 20. Photo Arts Bldg., Balboa Park. Annual award banquet and installation of officers, Dec. 18.

CERAMICS — Meet 9 a.m.-noon and 7-10 p.m., Tuesdays and Thursdays.

CHESS—Play 7 p.m., Dec. 16.

CHORUS—Rehearsals 7:30 p.m. Mondays. Now rehearsing for special holiday hospital visits.

COUNTRY & WESTERN MUSIC — Meeting 7:30 p.m. each Thursday.

FENCING—Workouts and instruction 7:30-10:30 p.m., Fridays. YWCA, 10th & C Sts.

GOLF — CRA championship tourney, Dec. 24, Cottonwood Country Club.

HEALTH CLUB — Open 9:30 a.m.-10 p.m., Monday through Thursday; 9:30 a.m.-9 p.m., Fridays; 9 a.m.-noon, Saturdays; "women only" weekdays, 9:30-11 a.m.

ICE SKATING — GD family skate night 6:15-7:45 p.m. each Thursday, House of Ice, Interstate 8 and Lake Murry Blvd. Flat rate fee $1 (includes skates).

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions 7 p.m. each Tuesday, CRA Missile Park.

SCULPTURE—Workshop sessions 7:30-10:30 p.m. each Monday.

SKI CLUB—Meeting 7:30 p.m., Jan. 5, South Bay Club, recreation room.

SQUARE DANCE—Dance 8-10 p.m., Thursdays.

TOASTMASTERS—Convair Toastmasters meet 4:30 p.m. each Wednesday. Dynamic Toastmasters meet 5:30 p.m. Thursdays.

TRAILERS—Meet 7:30 p.m., Jan. 5.

WOMEN'S GOLF—Carlton Oaks tourney, Jan. 9.

Barbara Hurley's Fencing Takes Top Tourney Title

Barbara Hurley, wife of CRA Fencing Club commissioner Mike Hurley, took first place honors in the women's division of the 11th annual San Diego Invitational Fencing Tournament at Grossmont College last week (Dec. 6). She had placed second the previous year.

The tourney, hosted by the CRA fencers, attracted 48 men and 42 women representing 18 clubs from as far as Tucson and San Francisco. Mike Hurley was eliminated in semi-finals.

Runners-up to Mrs. Hurley in the women's division were Maxine Mitchell, an Olympic fencing team member from Ontario, and Margo Reynolds from San Francisco. Men's division winners were Leslie Bleamaster of Los Angeles, Hiek Hamourzamiam of San Francisco, and Joseph Elliott of Los Angeles.

"Powder puff" awards also went to winners of consolation tourneys staged concurrently with the main events for those eliminated in early rounds.

CRA fencers have workouts and instruction at 7:30 p.m. each Friday in the San Diego YWCA gym.

Computer Course Scheduled for KM

Educational services at Convair Aerospace-SD is offering a basic computer course to General Dynamics employes with a desire to learn the fundamental concepts of data processing and computer programming.

The course is open to both hourly and salaried personnel free of charge. There are no prerequisites.

Previously offered at costs up to $60, the course will cover computer terminology, procedural logic, programming and data formating, as well as acquaint students with EDP equipment in preparation for advanced computer courses.

The 12-week evening training program will be held from 4:30-6 p.m. Monday and Wednesday, at the Kearny Mesa plant beginning Jan. 11. Fred Schwend will instruct.

The class will be limited to 25 students. To register or for more information call educational services, ext. 2564 LF.

Winners Announced For Twilight Golf

Winners have been named in the Convair Management Association 10-week twilight golf leagues play. They are:

Sam Snead—Bud Swindall and Bud Calvin, first; Frank Mafnas and Joe Terramagra, second.

Mission Bay I—Bill Jungeman and George Heller, first; Jim Woodhouse and Ralph Dempsey, second.

Mission Bay II—Ray Esparza and Nick Kazlouskis, first; Ken Hazelwood and Bill Bussard, second.

Andy Williams Open Tickets Available

Reduced-price tickets are on sale at employe benefits and CRA outlets for the Andy Williams San Diego Open golf tournament to be held Jan. 26-31 at Torrey Pines. Cost is $2.75 for weekday, $4 for weekend, and $15 for season tickets.

Is it news? Pick up a phone and call GD/NEWS

Perfumes, Pearls Ready for 'Santa'

Christmas gift items ranging from pearl necklaces and perfumes to flight bags are on sale through Convair Aerospace-SD and Electro Dynamic-SD employe benefits and CRA outlets.

The Prestige pearl necklaces are $18.50 with matching earrings at $4. Gold lapel pins with jade stones, pearl stones, or ivory rosettes and silver lapel pins are $3 each.

Perfumes available are by Louis D'or of France and include boxes of six different fragrances at $8.50 each and assorted small bottles in four different fragrances at $1.75 each.

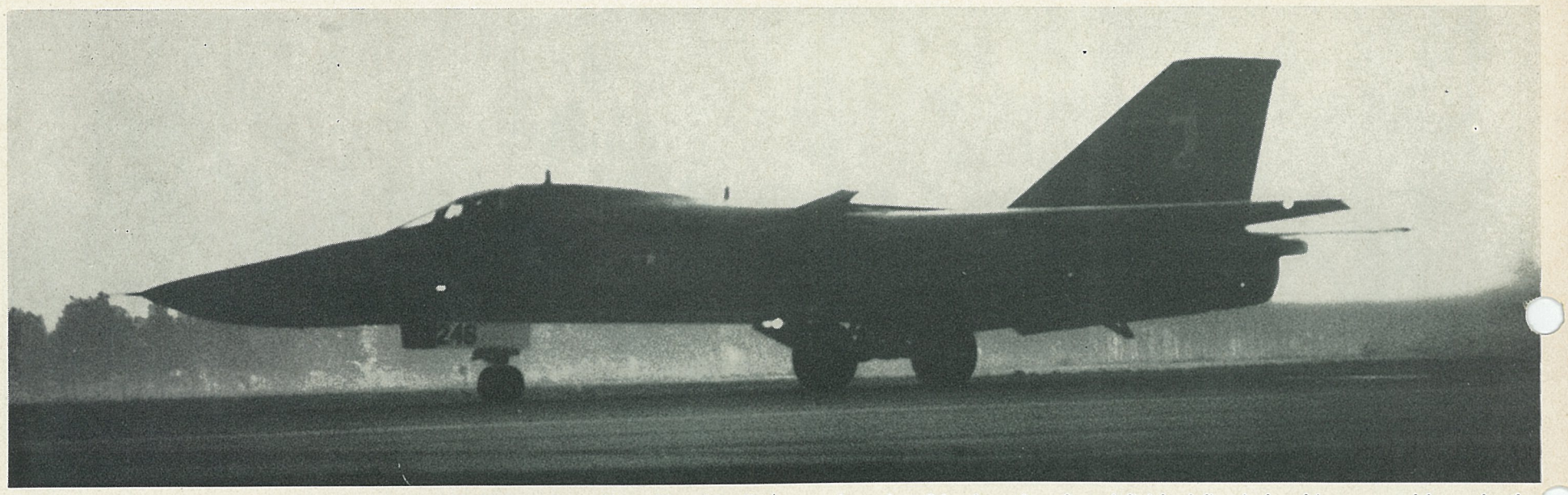
The carry-on flight bags, made of fine-grain material and with heavy-duty zippers, are $10.50 each and are available in brown, black, and olive colors.

Nell Bartlett's 63 Wins Turkey in Golf

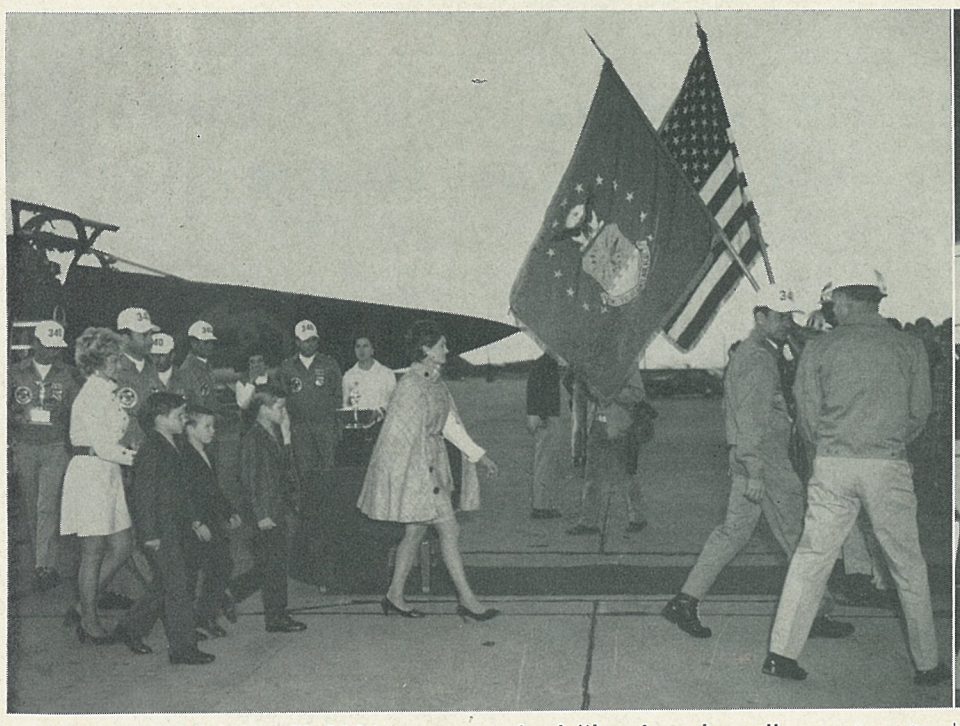
Nell Bartlett fired a low net 63 to take first place honors and a turkey in last month's General Dynamics Women's Golf tourney over River Valley links.

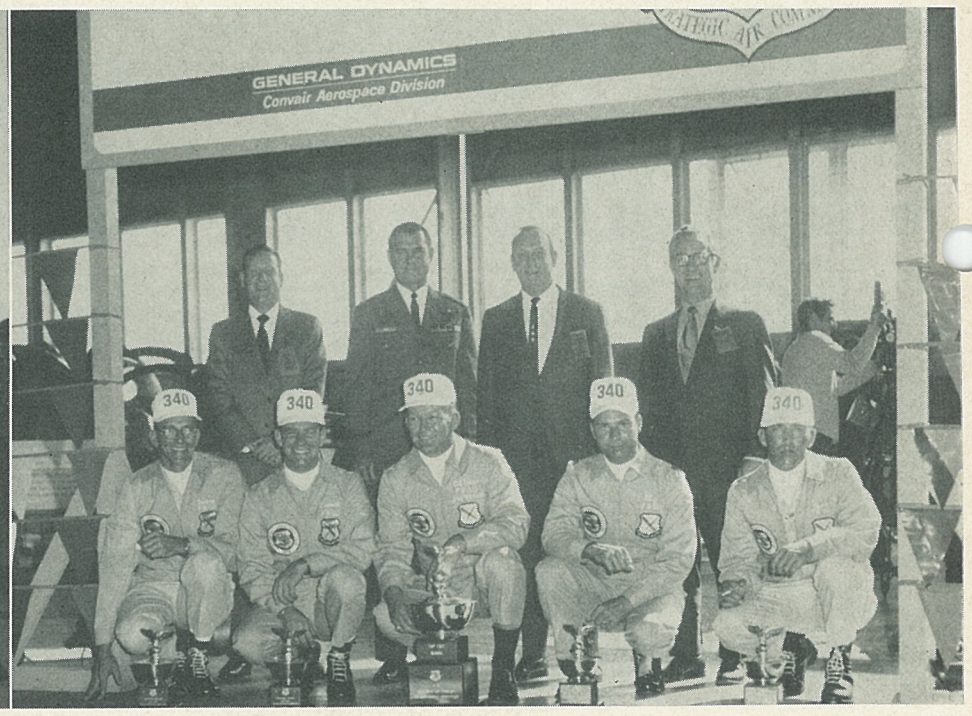
Dorothy Johnston, runner-up, also won a turkey with net 65. A 68 by Freda Magargal placed third with Ilene Wilson one shot back.

The January tournament will be Jan. 9 at Carlton Oaks Golf Club.



OFF TO "WAR"—With afterburners blazing, FB-111A takes off on "bombing" sortie, grueling 5½-hour flight in 1970 SAC Combat Competition. Two FBs competed against 26 other aircraft and finished first in bombing, second in navigation during competition held Nov. 15-20.





HOME VICTORIOUS—FB-111A crews received "hero's welcome" on return to Carswell AFB, Texas, home of 340th Bomb Group. At right, crews and Fort Worth operation officials had plenty to smile about following victories in SAC Competition at McCoy AFB, Fla.

Team Heading Home

Pollution Samplings Gathered In Corporate-Wide Surveys

General Dynamics' corporate-wide environmental hygiene and pollution surveys were scheduled to be completed this week by a two-man team from the Bioenvironmental Health Center (BEHC) at Convair Aerospace Division's Fort Worth operation.

The BECH, headed by Frank Paschal at Fort Worth operation, was established in August, 1969, as a result of studies by the Corporate Industrial Pollution Committee of which W. J. Stanley, Convair-SD manager of plant engineering, is chairman, and is responsible for providing technical information, know-how, measurement, and evaluation in areas of air, water, noise, and thermal pollution control, occupational health and safety, and other facets of environmental hygiene.

A visit to the Electro Dynamic Pomona operation and the Navajo facility at Fort Defiance, Ariz., were scheduled before the two returned to Fort Worth this week with their station wagon load of portable sampling and analyzing instruments.

The program has been under the direction of Algie A. Hendrix, Corporate vice president; Dr. John P. McCann, Corporate director of health, safety, security, and fire; and Frank L. Paschal Jr., BEHC administrator.

Facilities studied included those at Canadair, Stromberg Carlson, Quincy Shipbuilding, Electric Boat, Material Service, and other Electro Dynamic and Convair Aerospace operations.

"General Dynamics has long been concerned that the environment in which our people work and live shall be as safe and aesthetically acceptable as we can make it for their well-being as well as that of the communities in which our operations are located," an executive memorandum stated when the program was instituted in March, 1970.

Jim McKarns, an industrial hygienist, and Jack Morris, a process control chemist, spent the last two weeks at Convair Aerospace, Electro Dynamic, and Stromberg DatagraphiX facilities in the San Diego area making inspections and taking comprehensive rooftop exhaust-stack samplings.

Noise, dust, lighting, and radiation were studied along with analysis of gas, vapor, and particle discharges. Checks also were made of cafeteria and restroom sanitation systems.

Paschal said tentative plans are for BEHC study teams to revisit each facility again next year to examine each operation during a different season.

McKarns said short and long-range plans are being implemented at facilities where the surveys indicated a need for additional pollution control equipment to reduce emissions to the atmosphere or effluents to liquid waste systems.

Specialists can be assigned to study specific problems as they arise at General Dynamics facilities, conduct field surveys, and recommend corrective solutions.

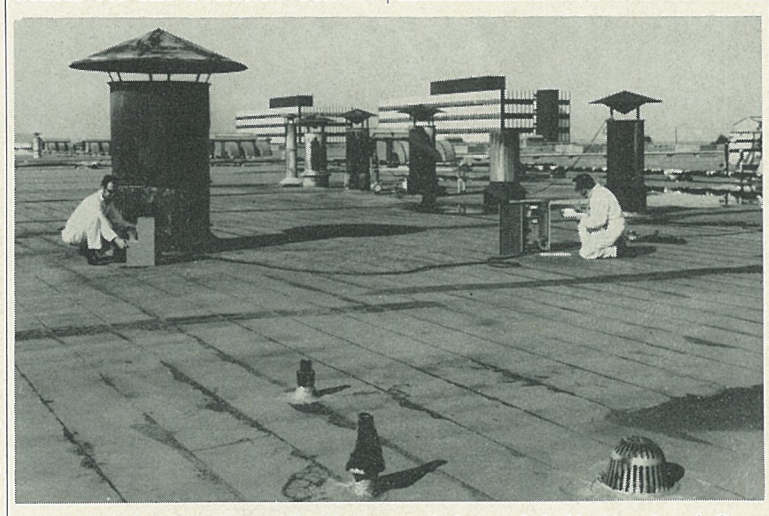
McKarns said plant engineering, operations, safety, industrial hygiene and other personnel have provided valuable assistance for the BEHC survey team at each facility.

Among instruments being used in analysis of emissions from exhaust-stacks at Convair Aerospace-SD plants last week was a device with a heated probe to eliminate premature condensation, a "cyclone separator" airstream to drop particles larger than five microns into a trap, a filter to catch smaller particles to .3-microns, and a water solution to hold still smaller particles for measurement.

Acids from processing tank exhausts were being trapped in a sodium hydroxide solution and the amount determined by the resulting chemical change.

McKarns holds a mechanical engineering degree from Ohio State and a master's in engineering with specialization in health physics and industrial hygiene from Harvard. He joined General Dynamics as an industrial hygienist in the medical department at Fort Worth four years ago after two years with Esso Research and one with Reynolds Electrical and Engineering at the Nevada Atomic Test Site.

Morris holds a degree in chemistry and zoology from the University of Texas and did post-graduate work there. He joined General Dynamics as a chemist in process control at Fort Worth 4½ years ago after a year of research in water pollution control at the Texas Public Health Laboratory in Austin. He also has attended courses at the National Center for Air Pollution Control.



STACK SURVEYS—J. S. McKarns, left, and J. H. Morris of General Dynamics' Bioenvironmental Health Center take pollutant samples from nitric acid processing tank and paint spray booth stacks on factory roof at Convair Aerospace Division's Kearny Mesa plant in San Diego.

FB-111As Overcome Odds In Achieving Victory

The two FB-111As and their crews in the 1970 SAC Combat Competition overcame "great odds" to win top bombing honors and second in navigation.

Numbers alone—two FBs versus 23 B-52s and three British Vulcan bombers — don't tell the story.

"Experience was the biggest factor," said Bob Patton, 111 SAC program director. "FB-111A crews had been working together only since last July. Vulcan and B-52 crews had been working together for years, in most cases with the same aircraft."

The two FB crews—Lt. Col. Robert S. Russell, pilot, and Maj. Arben R. Ely, navigator, on one ship, and Lt. Col. Joseph S. Lother Jr., pilot, and Maj. Billy R. Seals, navigator, on the other —were combat veterans.

But until competition time, the pilots had logged only about 100 hours of flight time in FB-111As; navigators probably didn't have over 50 hours of flight experience.

On the other hand, crews on most of the other bombers in the competition had worked together as a team for years on the same aircraft. Many of the crews probably had up to 3,000 hours of experience.

"This can make a big difference in performance," Patton said. "When crews work closely together for long periods of time, they get to know precisely how every man will react in emergency situations. They also get to know the airplane. Every ship has its own 'personality'."

Still, the FB-111As and their crews performed like champions. Colonel Russell and Major Ely scored 685 points of a possible 800 to win top bombing honors.

"This was an extremely high score," Patton said. "The crew got two of the seven shacks (bullseyes) scored in the entire competition."

Colonel Lother and Major Seals took second in the navigation leg and 11th in bombing, finishing second overall.

A year from now, the FB-111A crews will have gained much more experience with themselves and with the aircraft. Then they'll be an even more formidable force to reckon with in SAC's Combat Competition.

For Fast Comeback See Mike Doorley

John Campbell of Fort Worth operation is known among fellow toastmasters as a fast man with a quip. But he may have met his match!

At a recent meeting, the club president introduced Mike Doorley, a new member, as a local high school teacher of Latin, French, Spanish, and tennis.

Campbell couldn't resist the obvious play on words. "Where," he interrupted from the floor, "do they speak tennis?"

"Why that's easy, "Doorley snapped back. "In Tennessee."